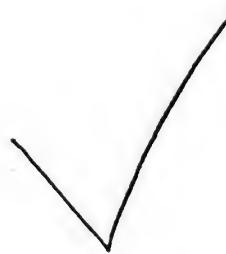


E X I D Y , I N C .

T V P I N B A L L

(MODEL TVPB)

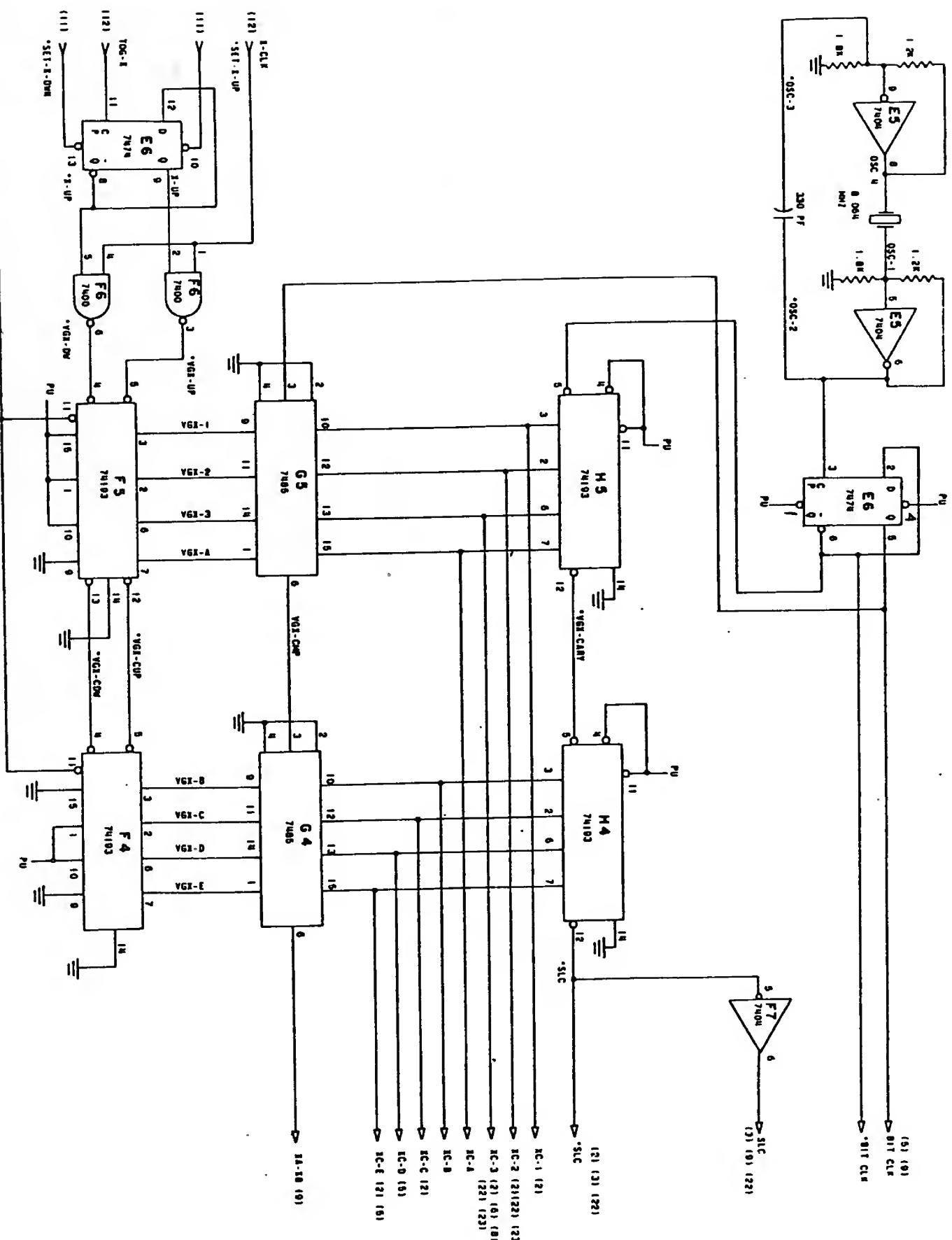


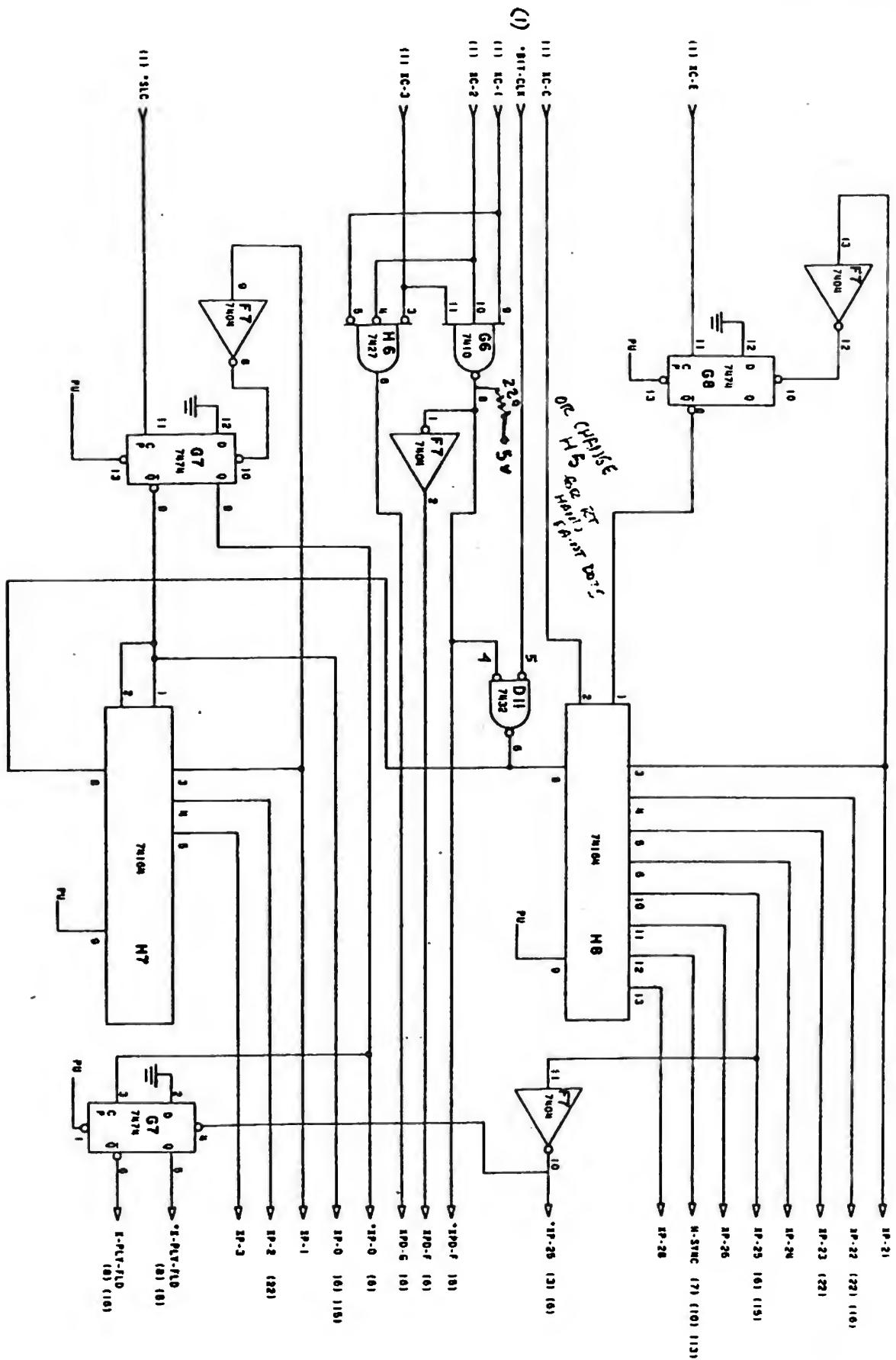
S C H E M A T I C

EXIDY, INC.

2599 Garcia Avenue, Mountain View, California 94043

(415) 968-7670



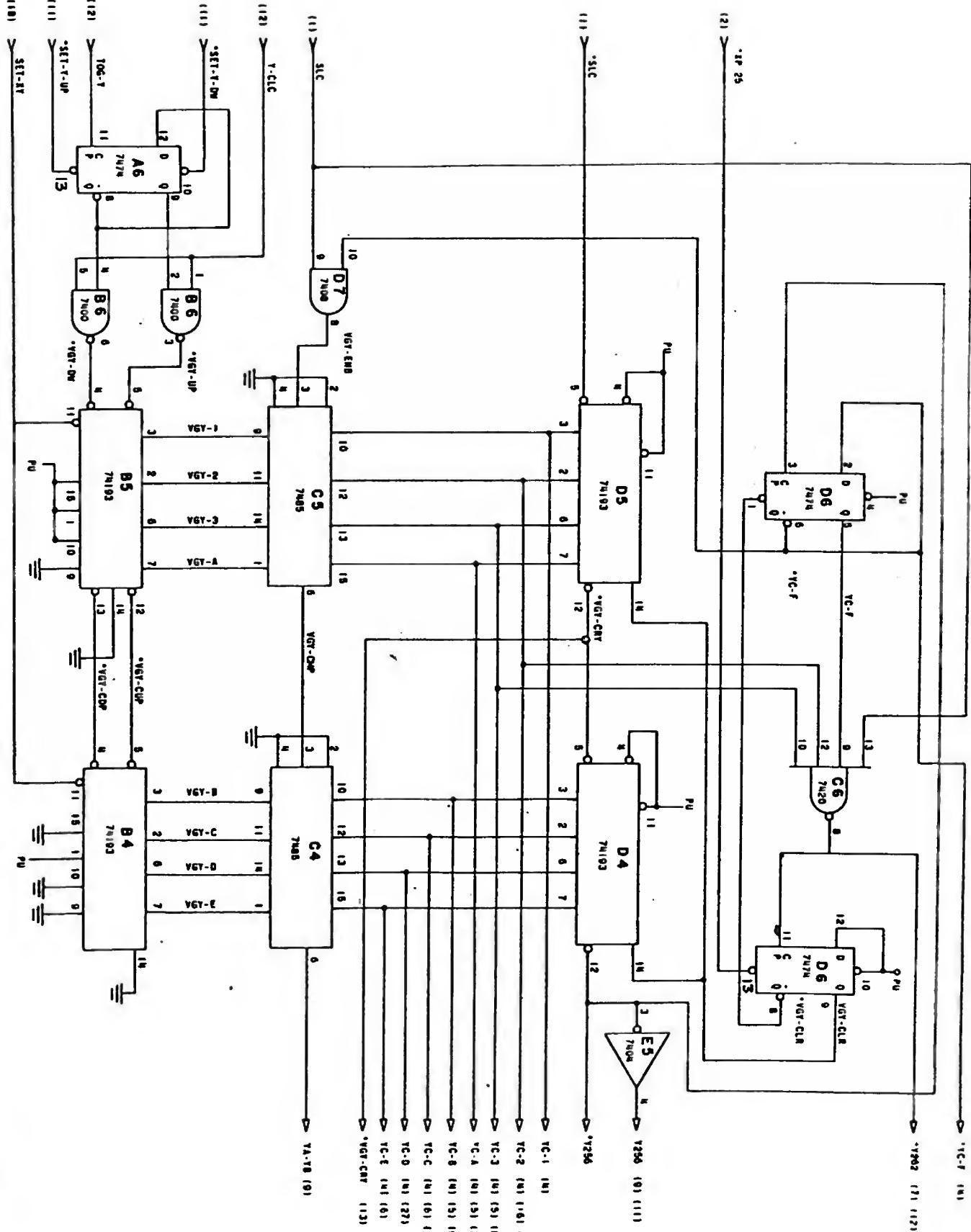


EXIDY, INC.

TV PINBALL

X P GENERATOR

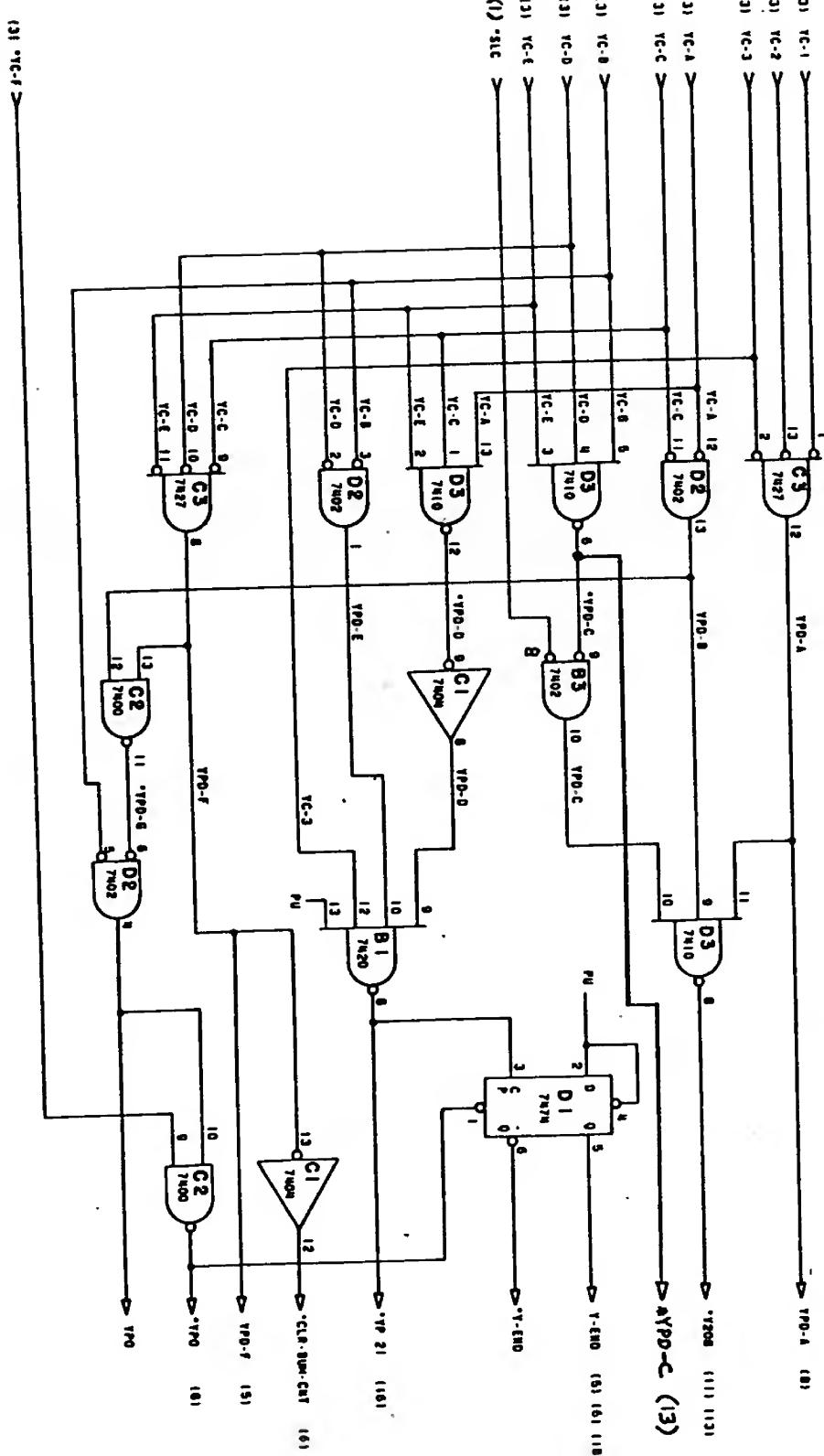
PAGE



**EXIDE, INC.**

TV PINBALL

VECTOR GEN Y

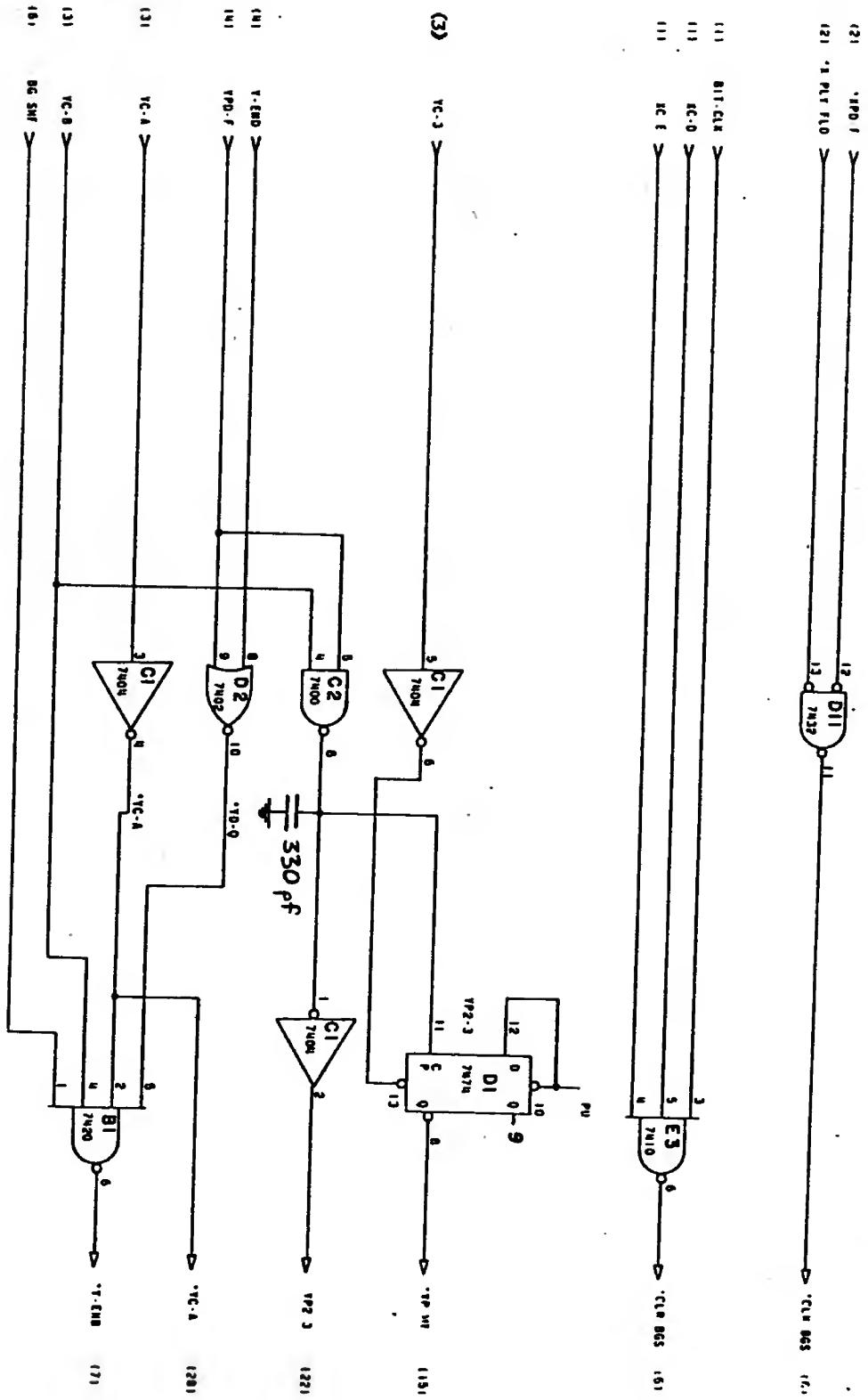


EXDY, INC.

TV PINBALL

Y POSITION DECODE I

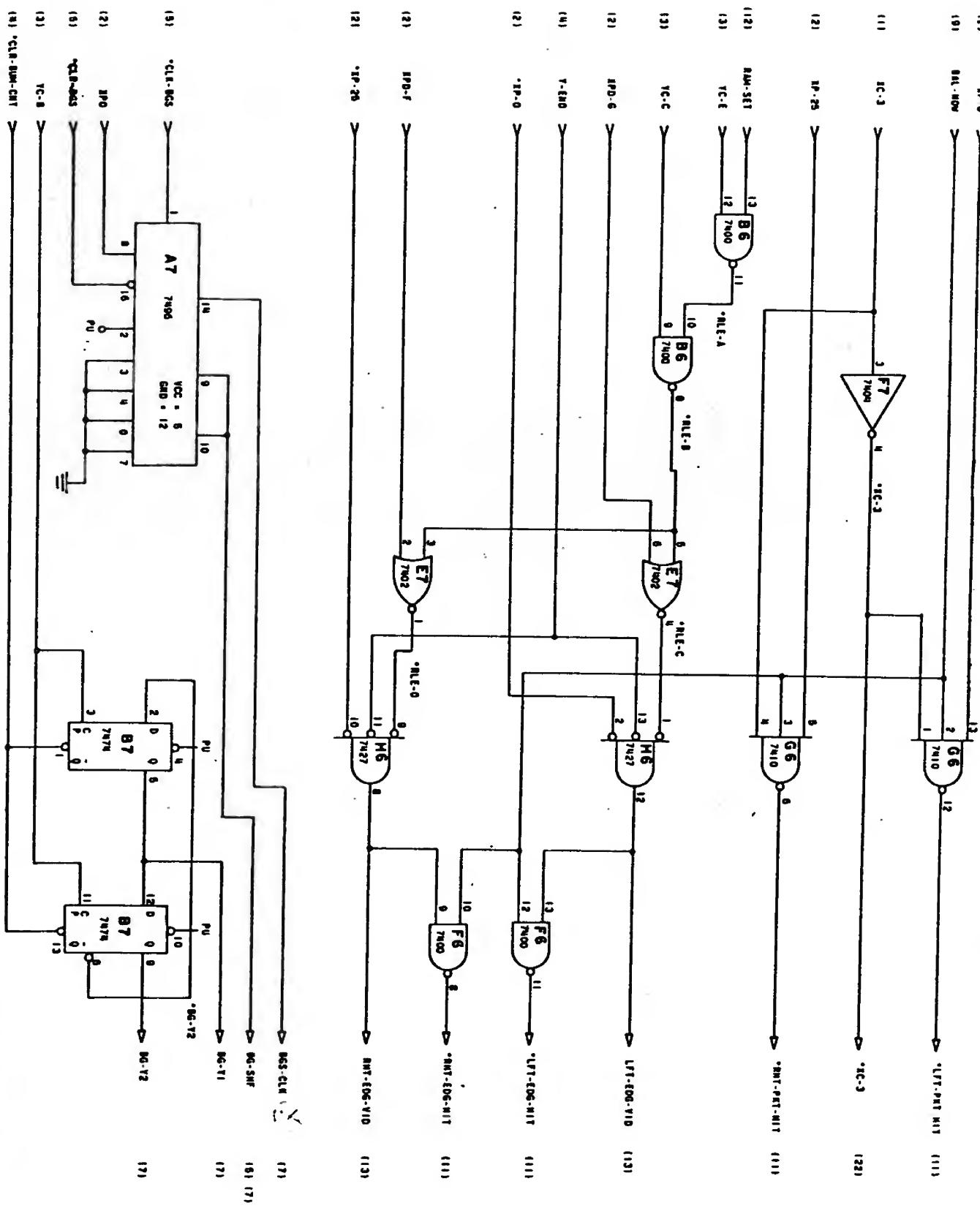
PAGE



EXTDY, INC.

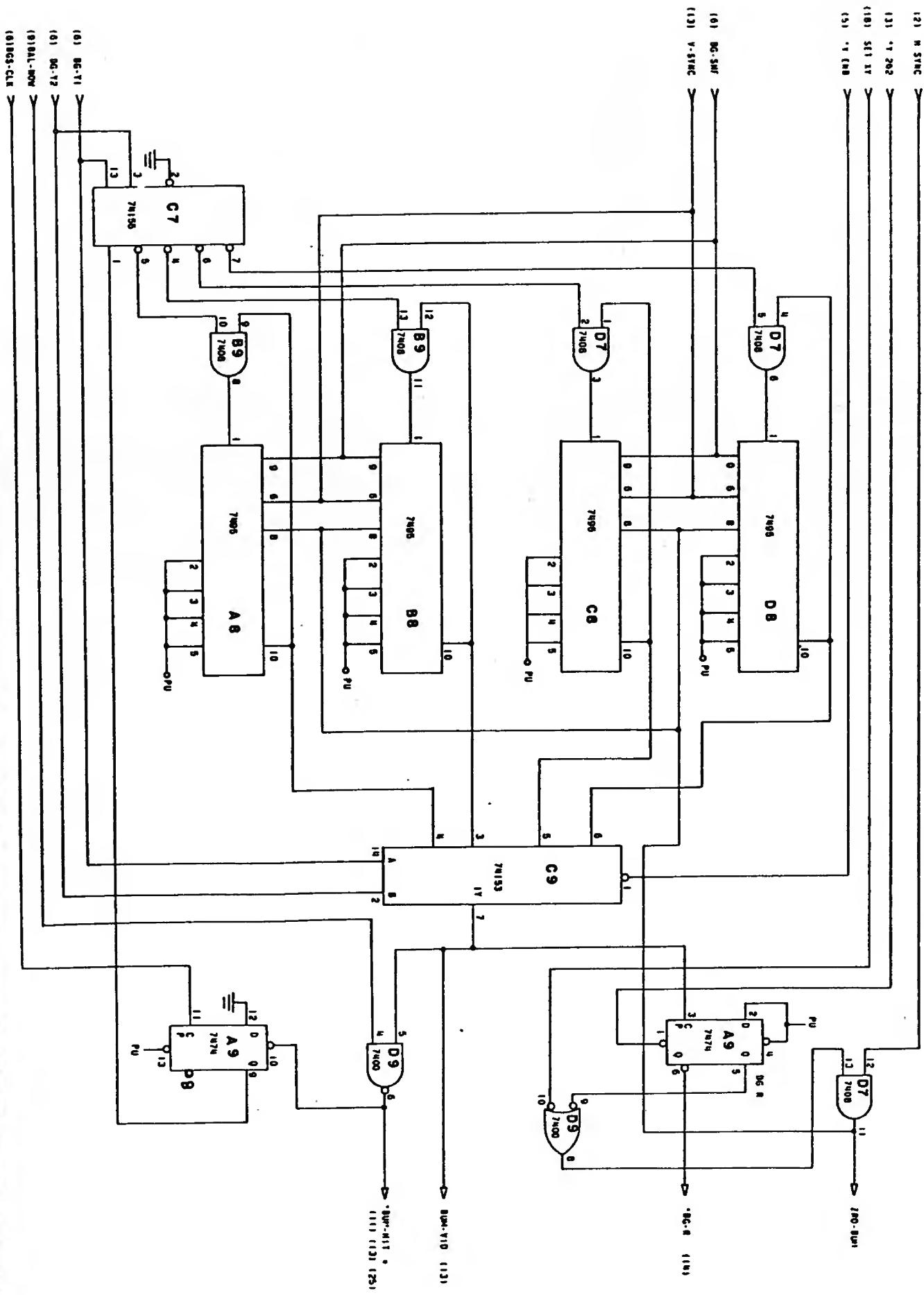
TV PINBALL

Y POSITION DECODE 2



EXIDY, INC.

**RL EDG & PKT & BUMPER  
GENERATOR I**

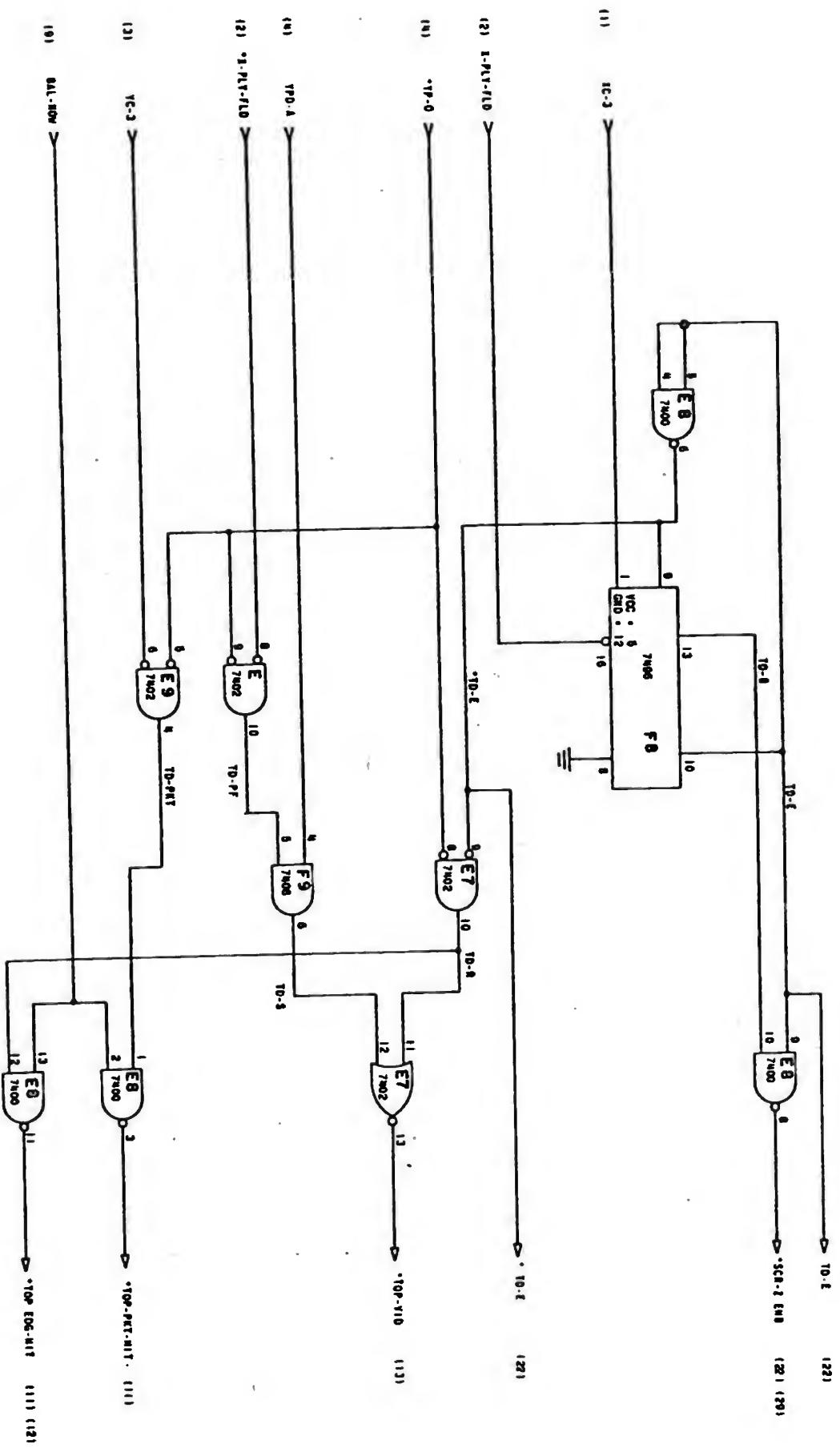


**EXIDY, INC.**

TV PINBALL

## BUMPER GENERATOR 2

四



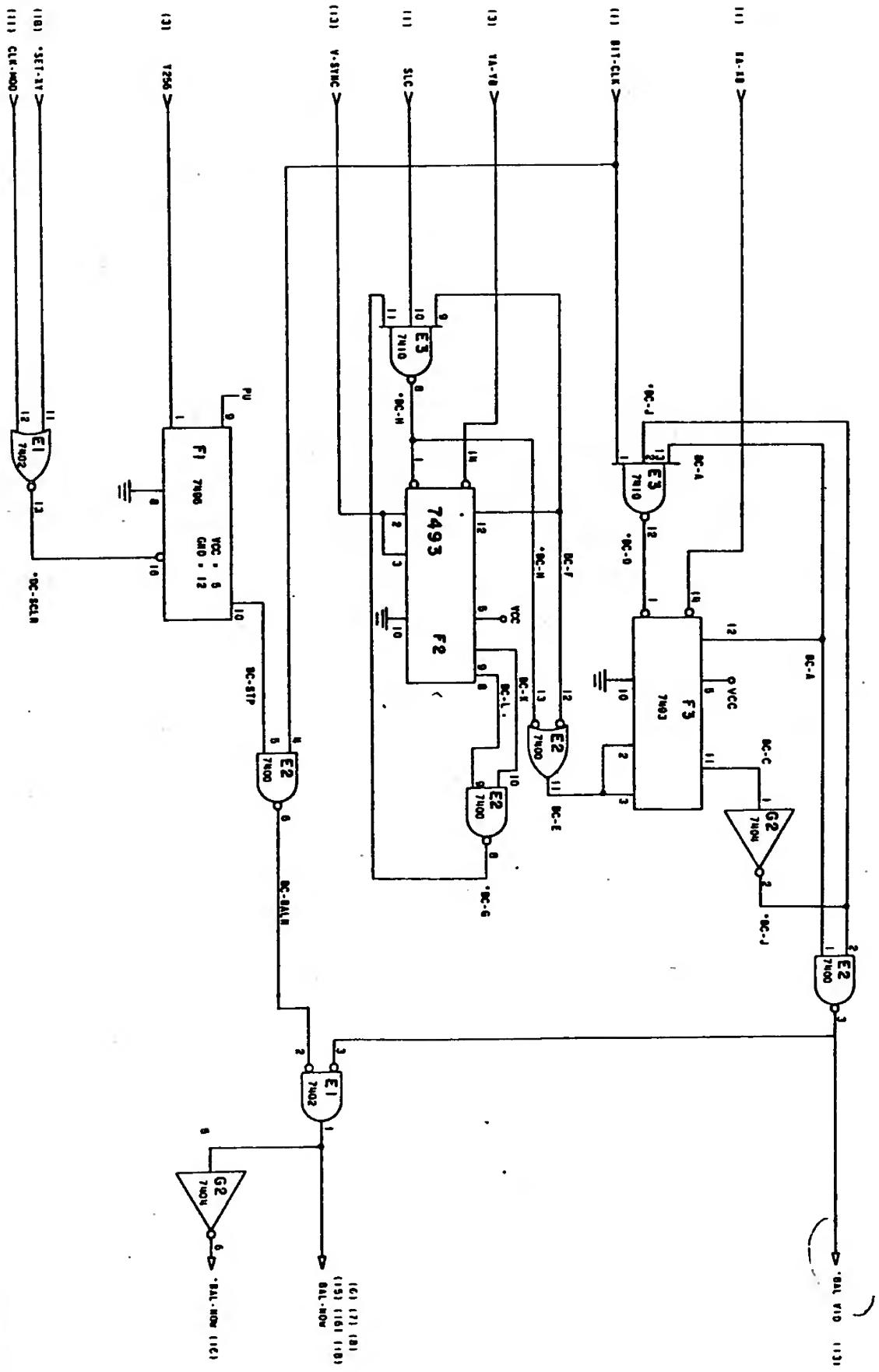
EXDY, INC.

TV PINBALL

TOP DISPLAY

PAGE

8

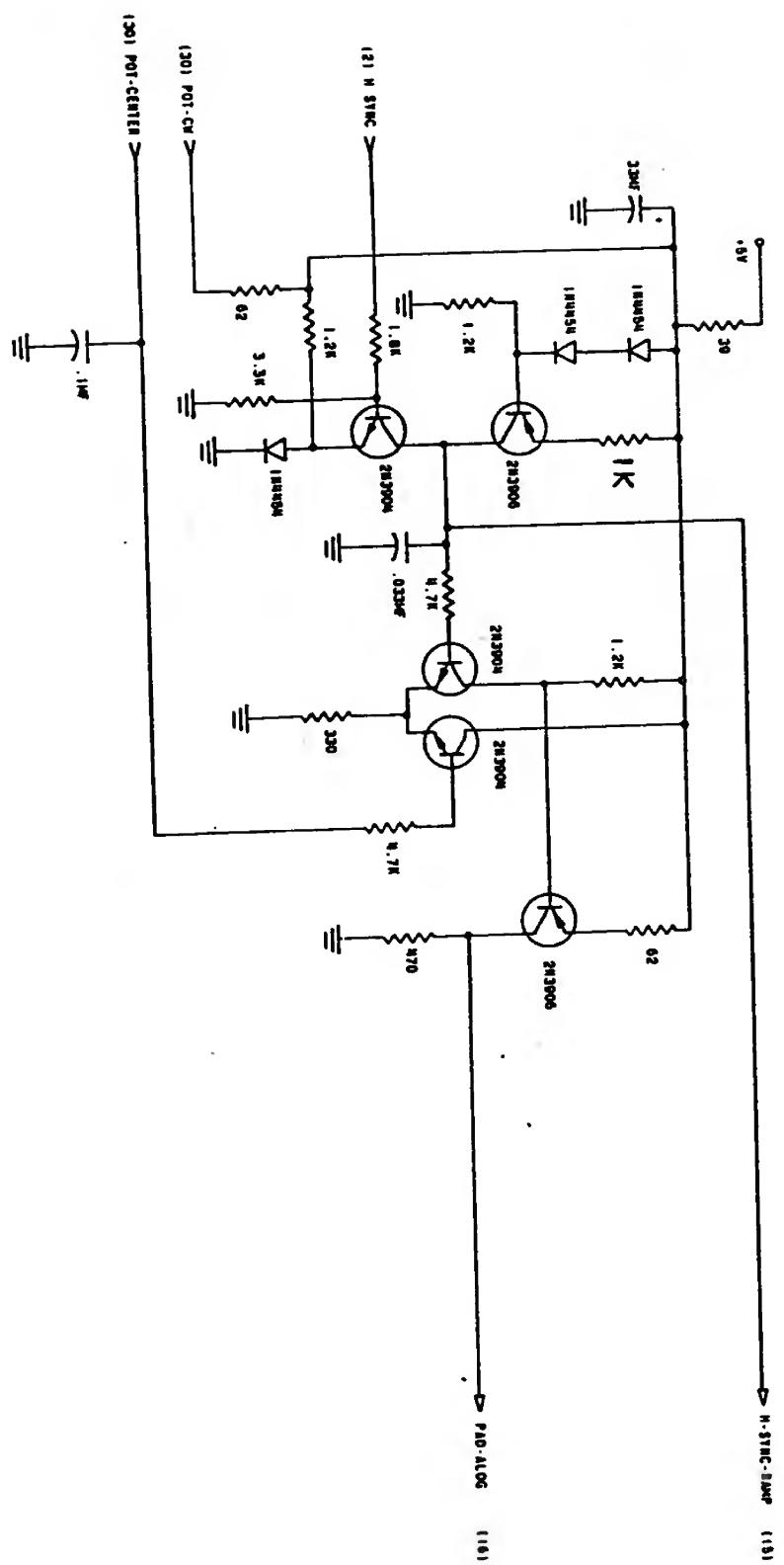


EXIDY, INC.

TV PINBALL

BALL CONTROL

PAGE



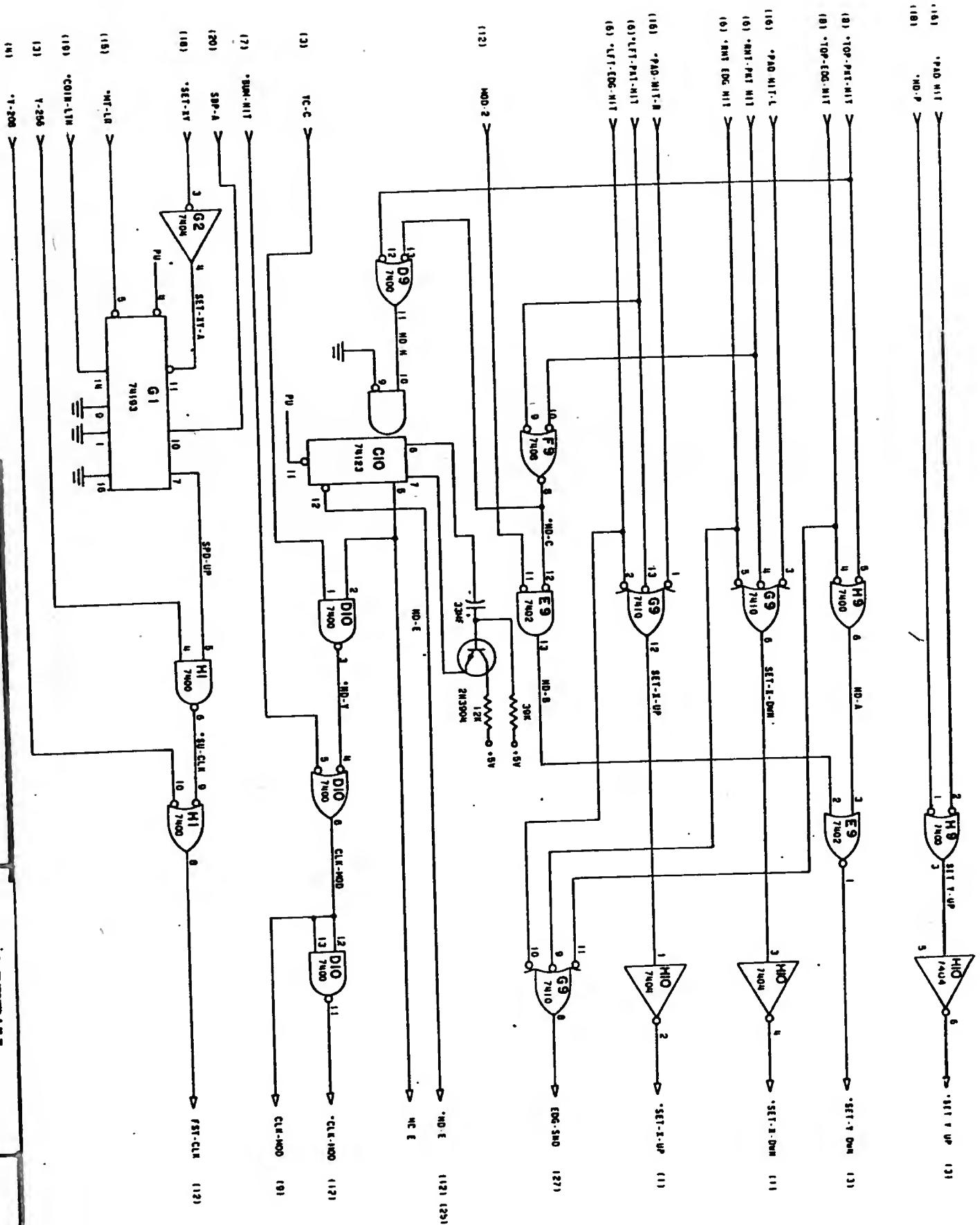
EXDY, INC.

**TV PINBALL**

PADDLE A/D

—

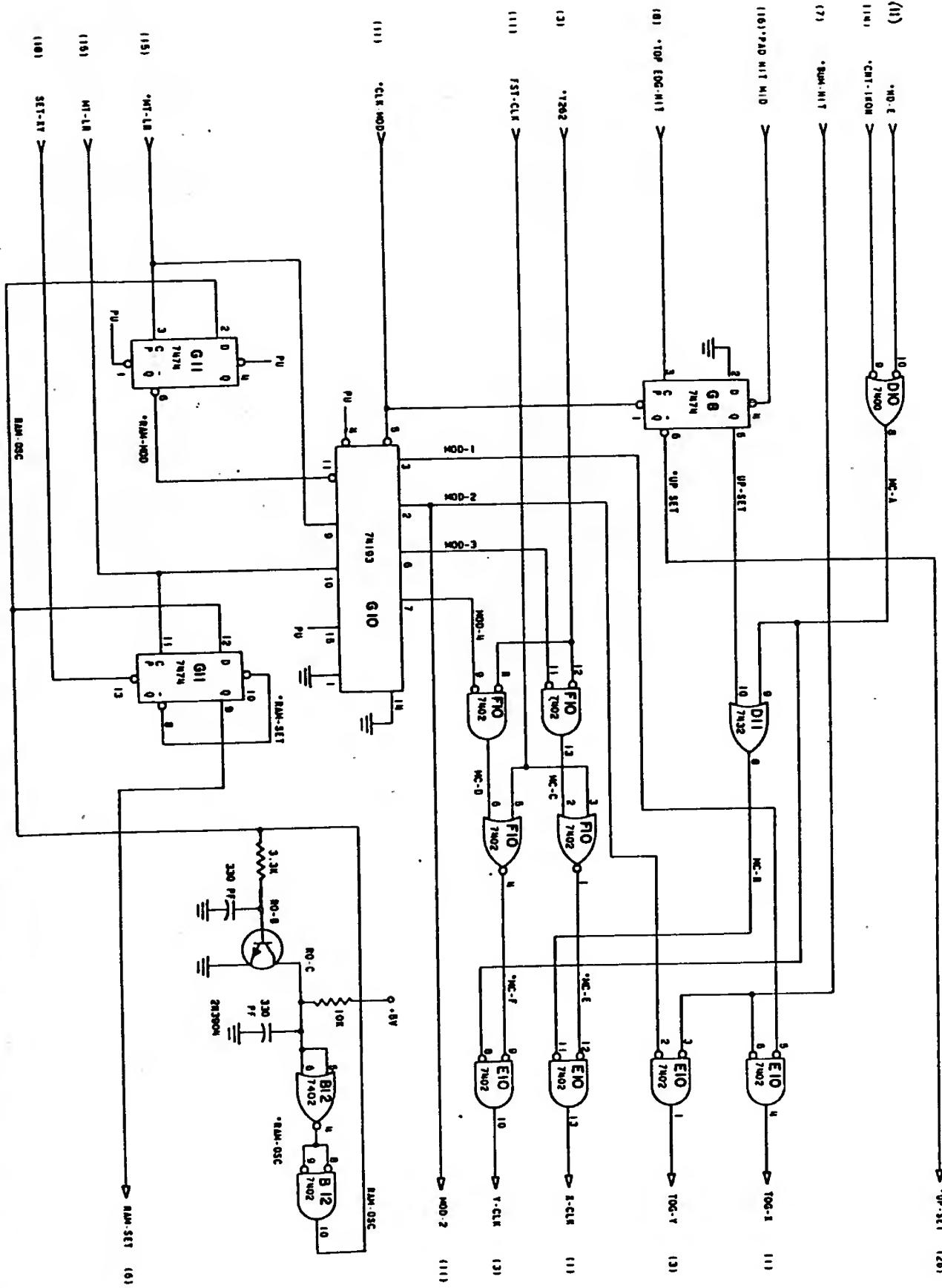
卷之三



**EXIDE, INC.**

TV PINBALL

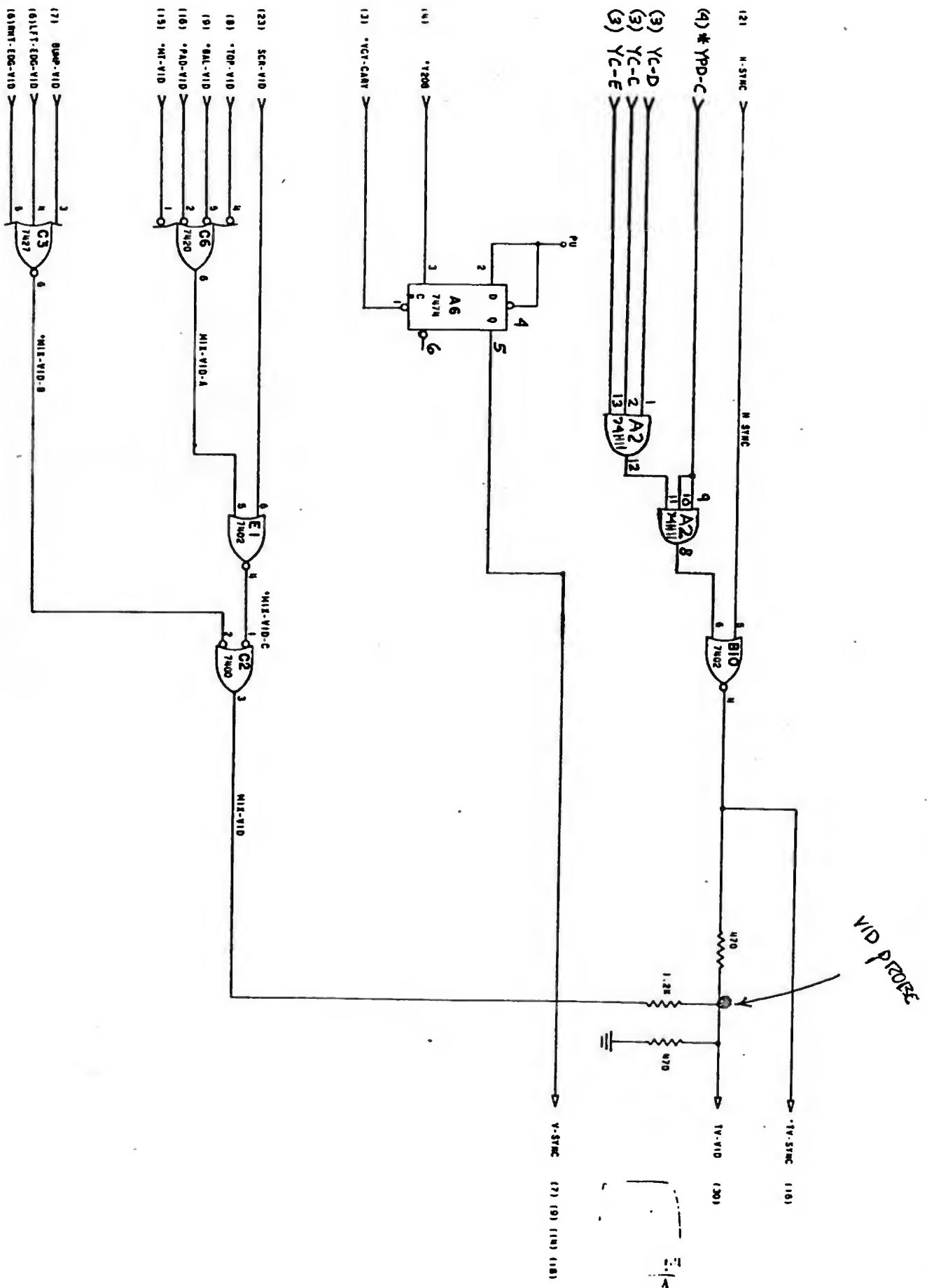
HIT DECODE



EXCELSIOR

TV PIRELLI

MODE CONTROL

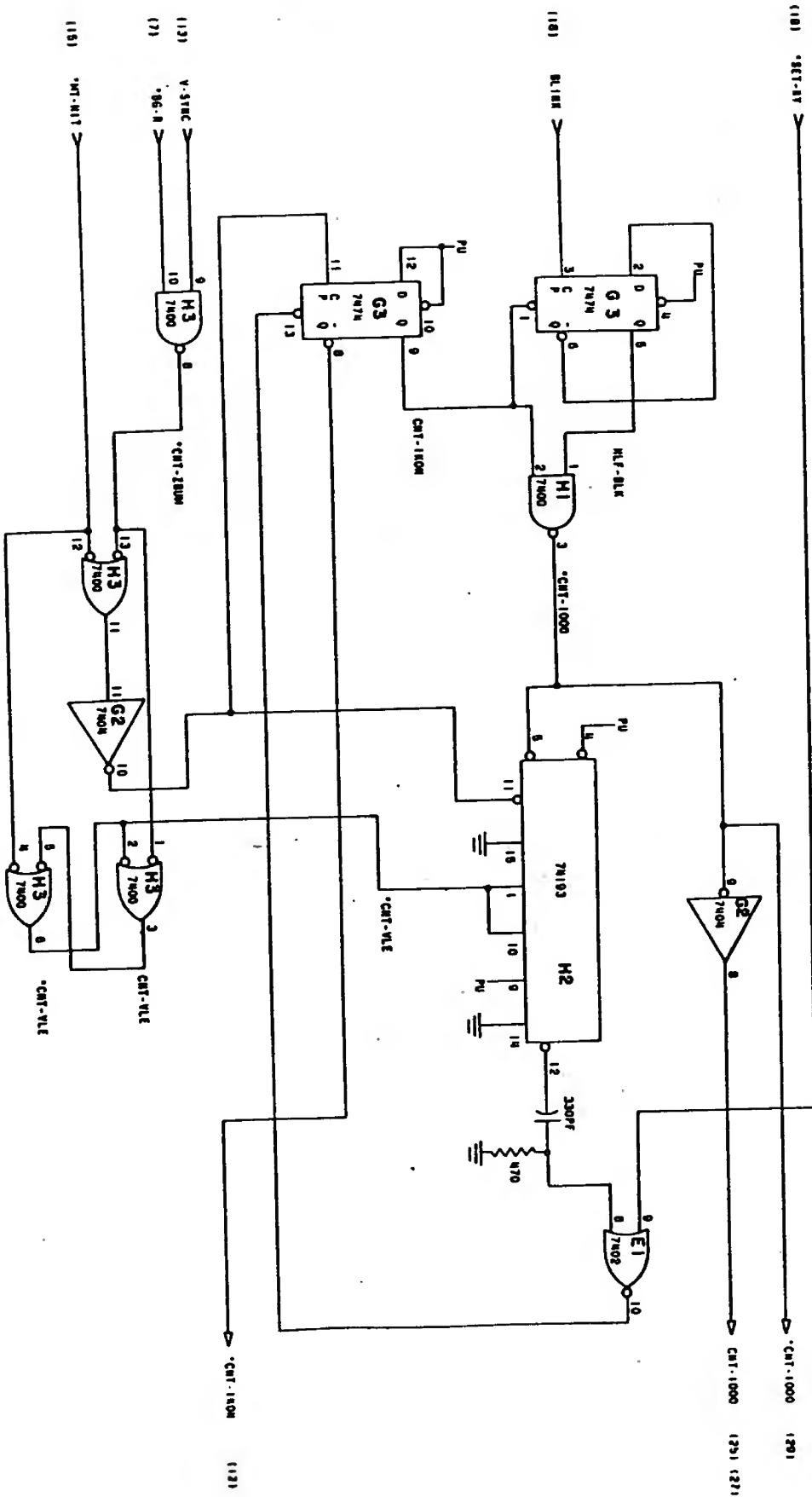


EXTDY, INC.

TV PINBALL

SYNC & VIDEO

四

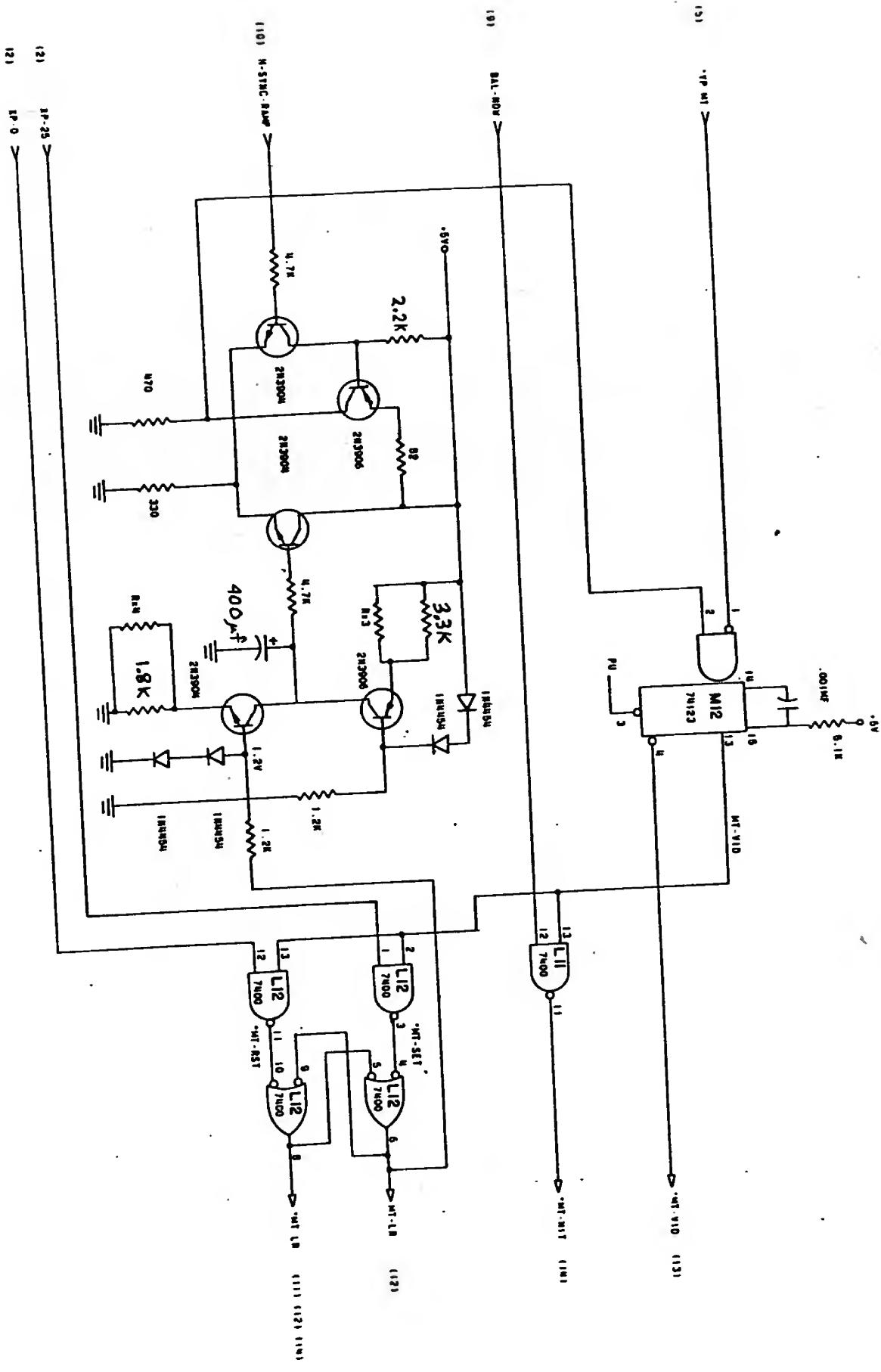


EXIDY, INC.

PINEAPPLE  
COUNT 1000

丁  
三

三



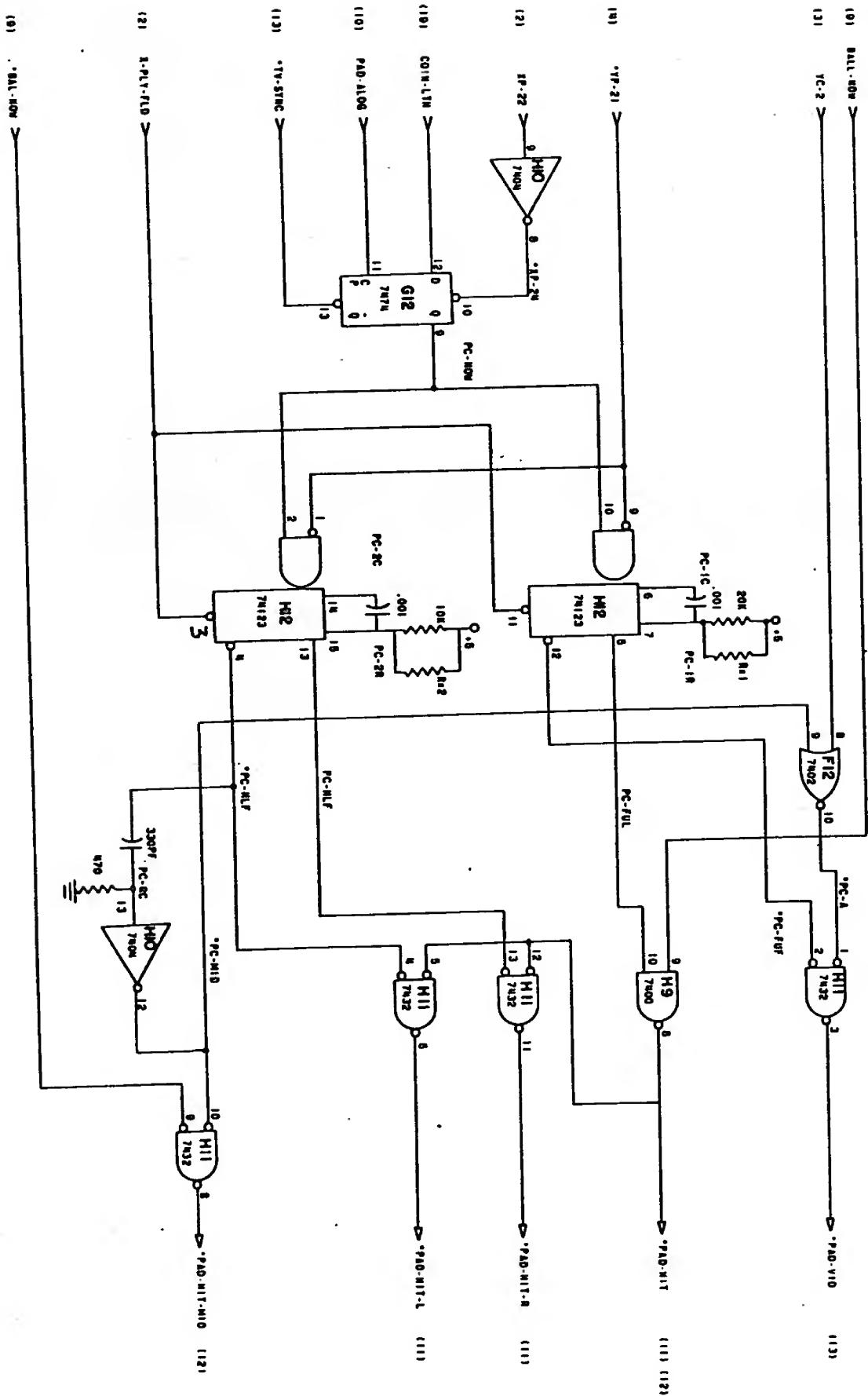
EXIDY, INC.

TV PINBALL

MOVING TARGET

PAGE

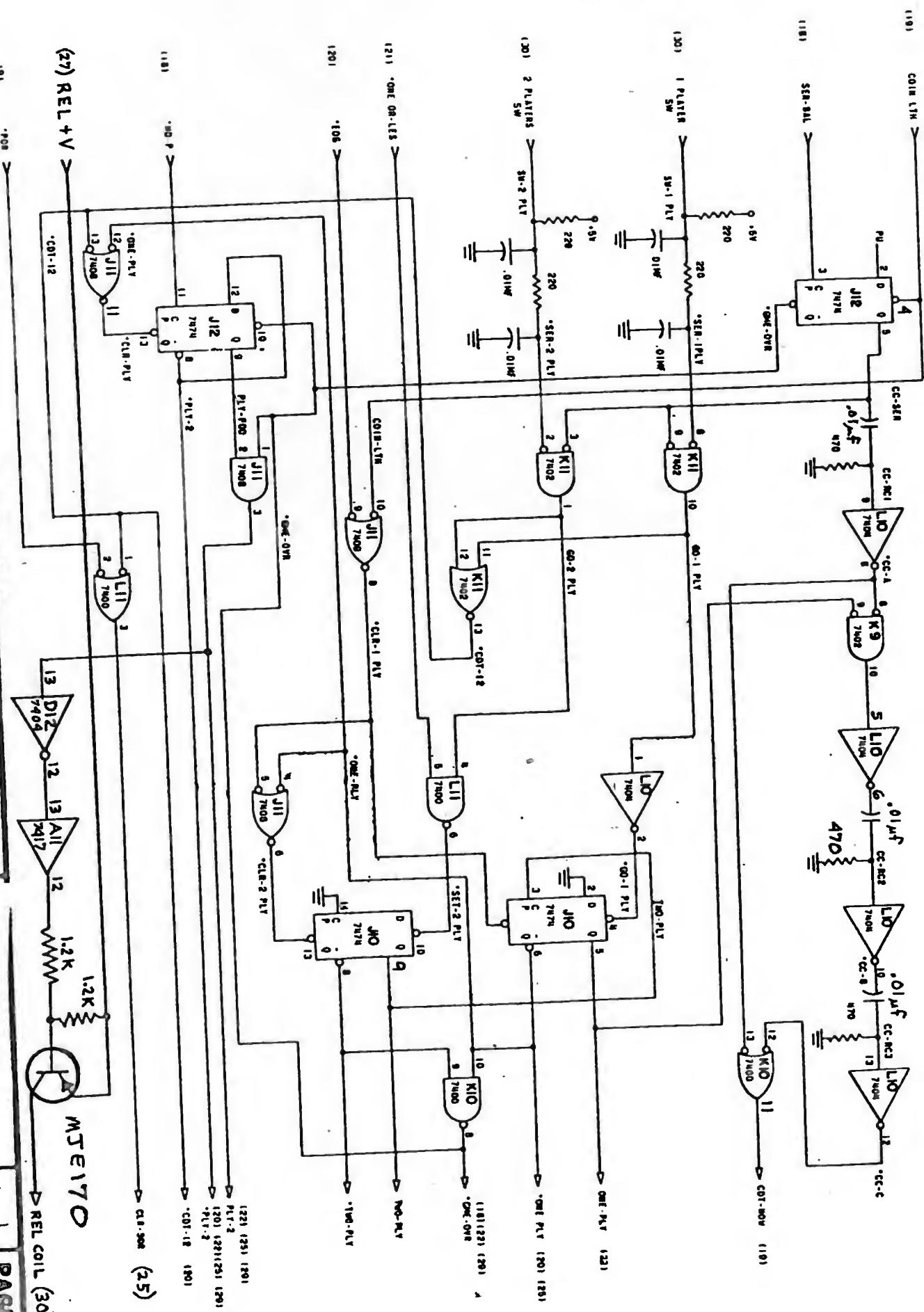
15



**EXIDY, INC.**

TV PINBALL

## PADDLE CONTROL



**EXIDY, INC.**

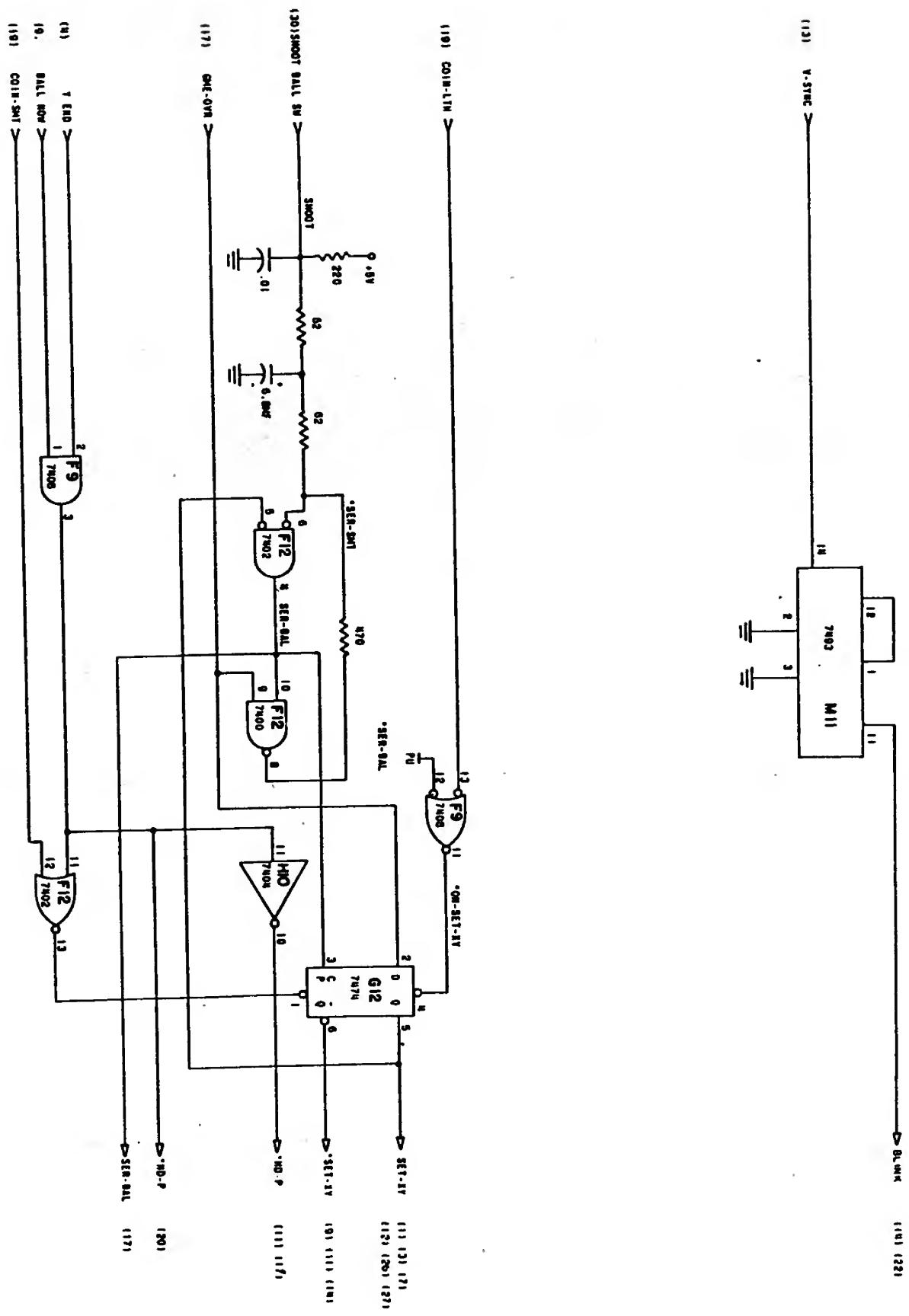
CREDIT CONTROL  
RELAY CONTROL

TV PINBALL

MJE170

coil (30)

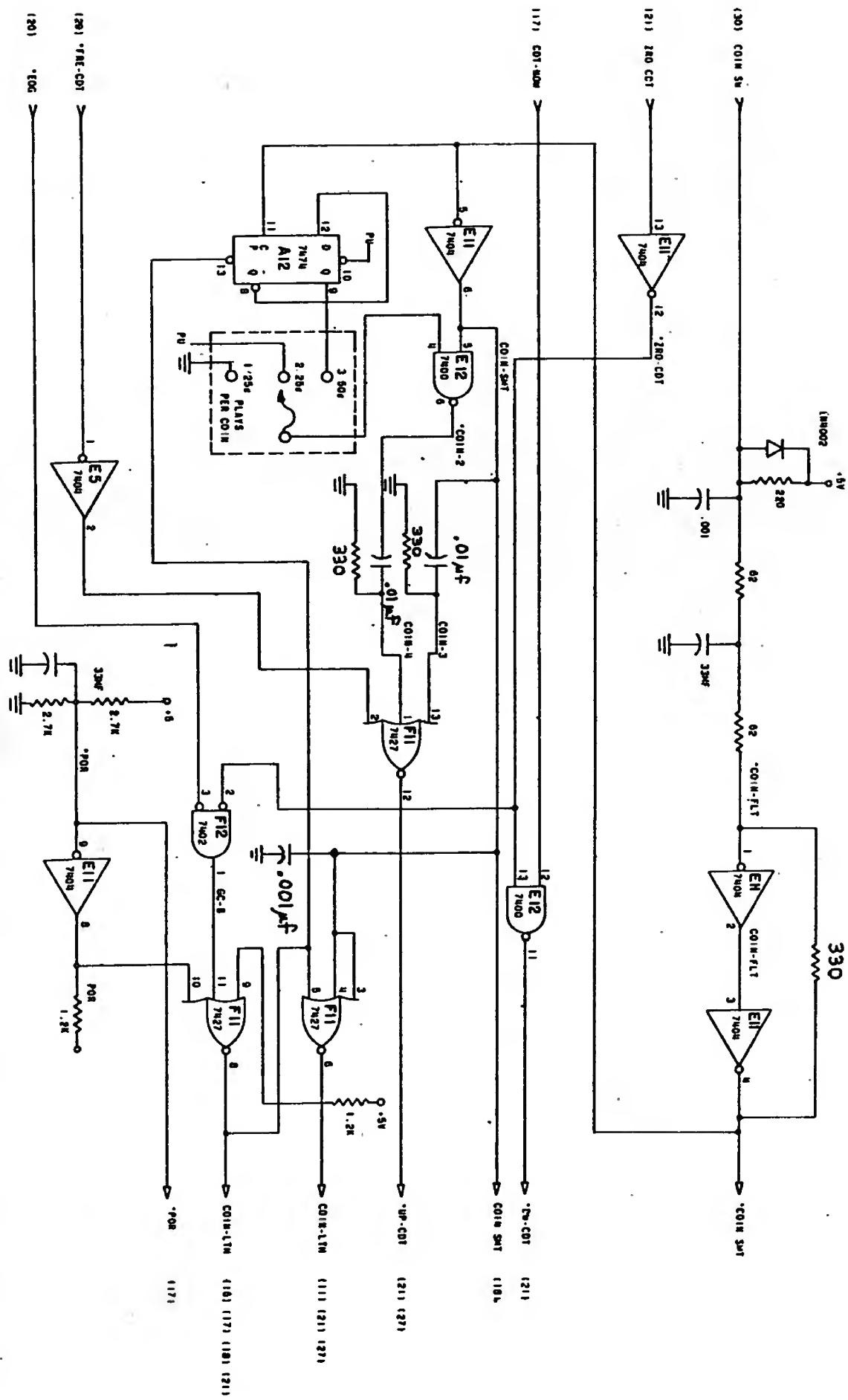
四



**EXDY, INC.**

TV PINBALL

## PLAY CONTROL

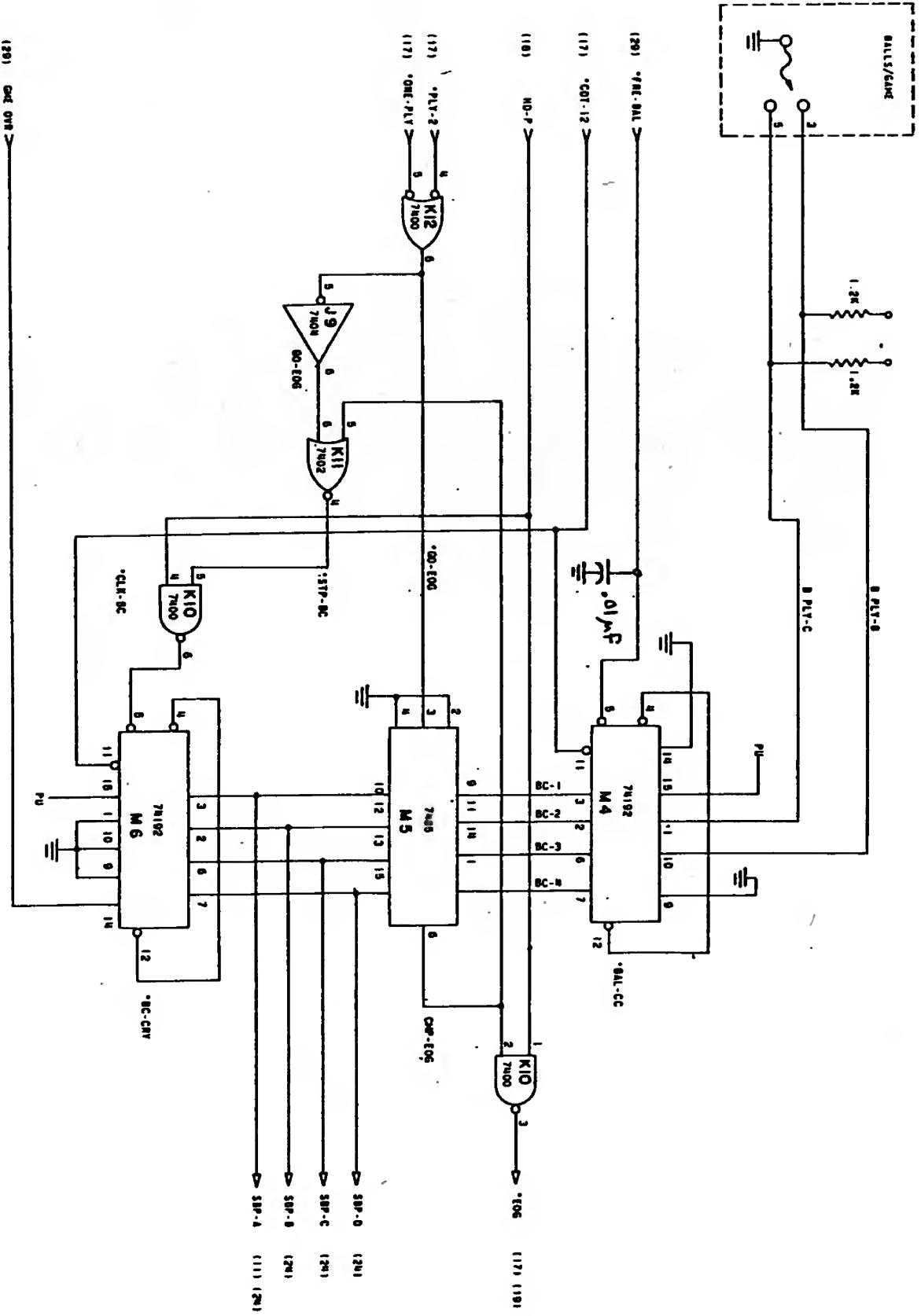


EXHIBIT

TV PINBALL

GAME CREDIT

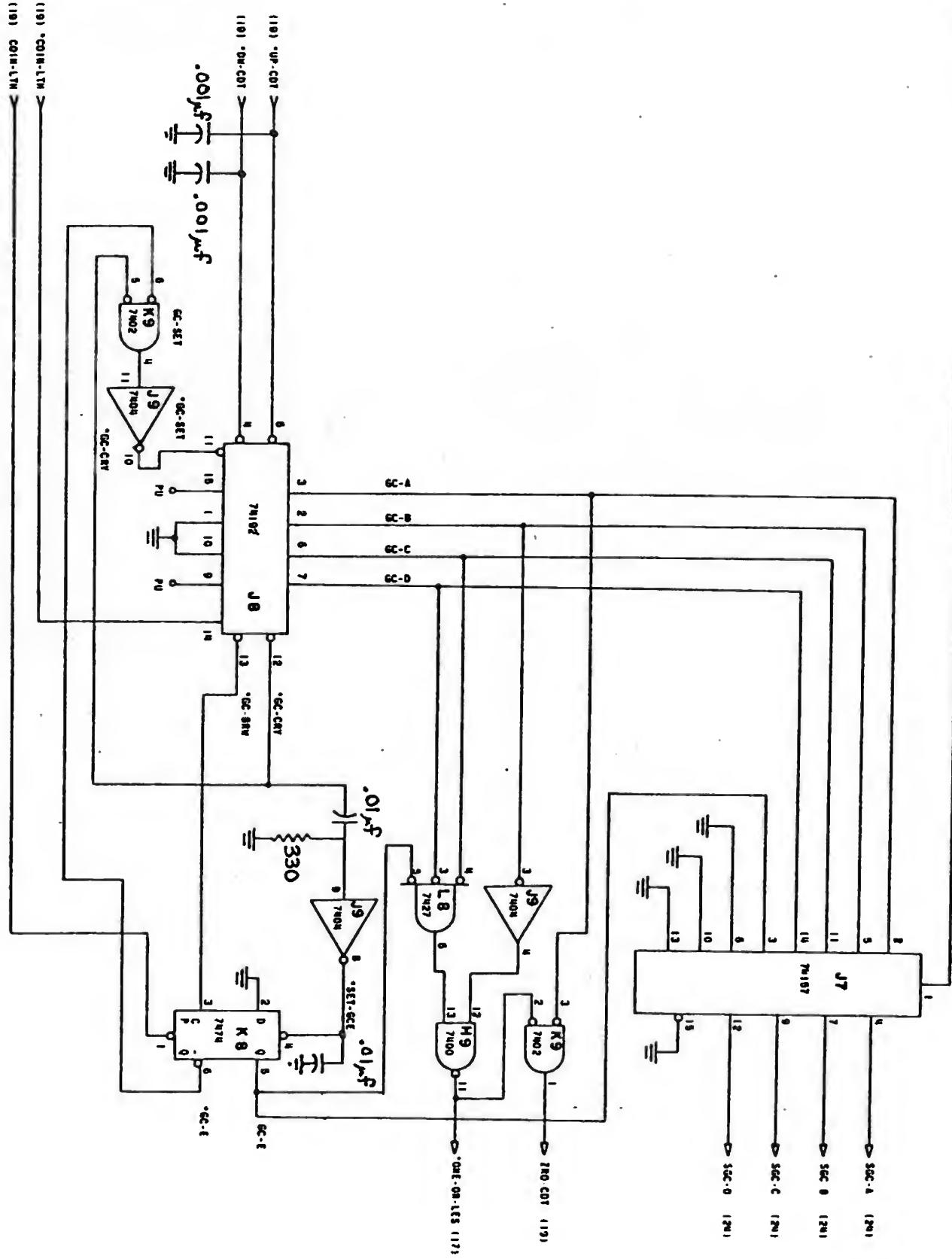
—  
6



EXIDY, INC.

TV PINBALL

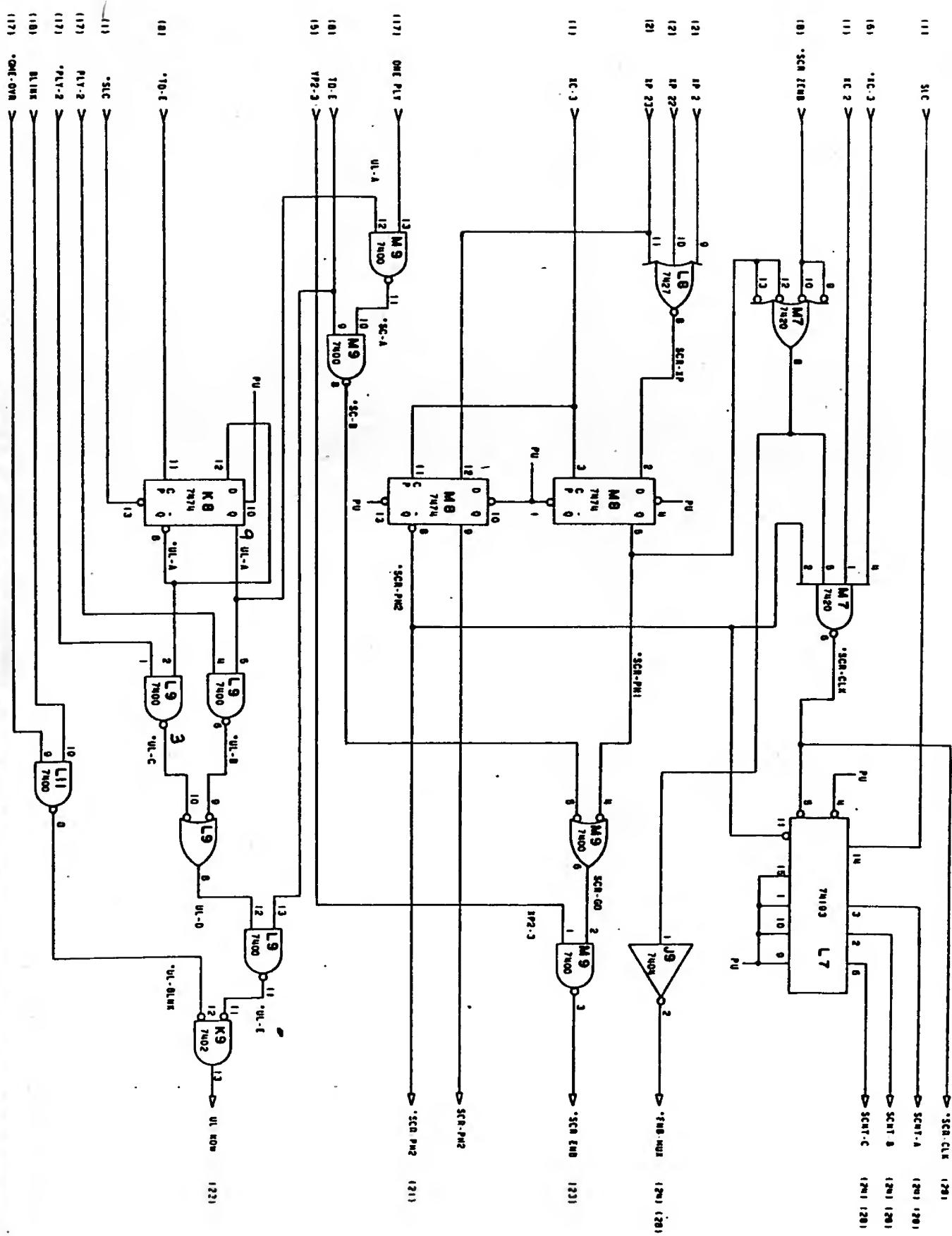
**BALL COUNT**



**EXIDY, INC.**

TV PINBALL

**GAME COUNT**

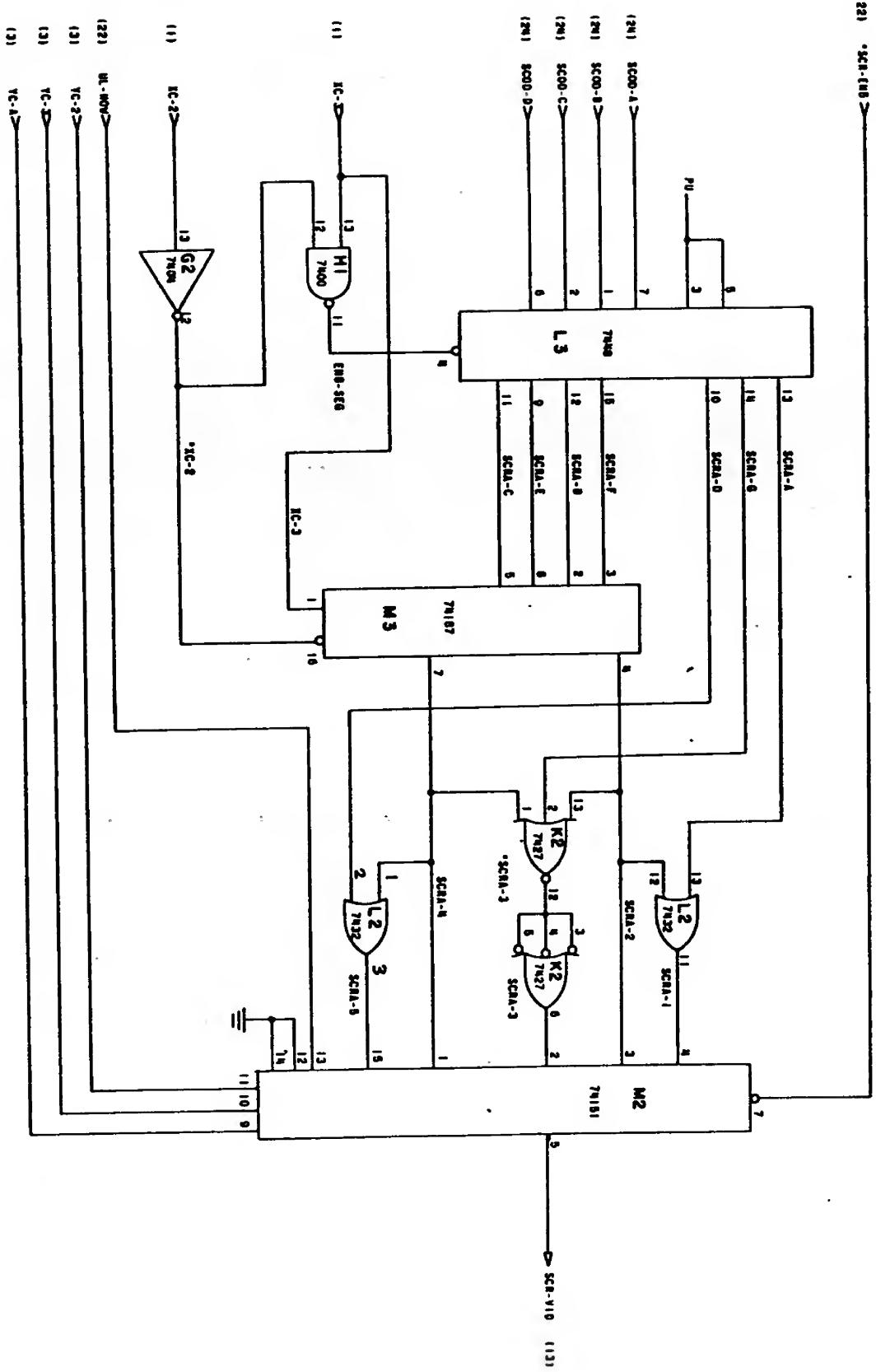


EXDY, INC.

TV PINBALL

SCORE CONTROL

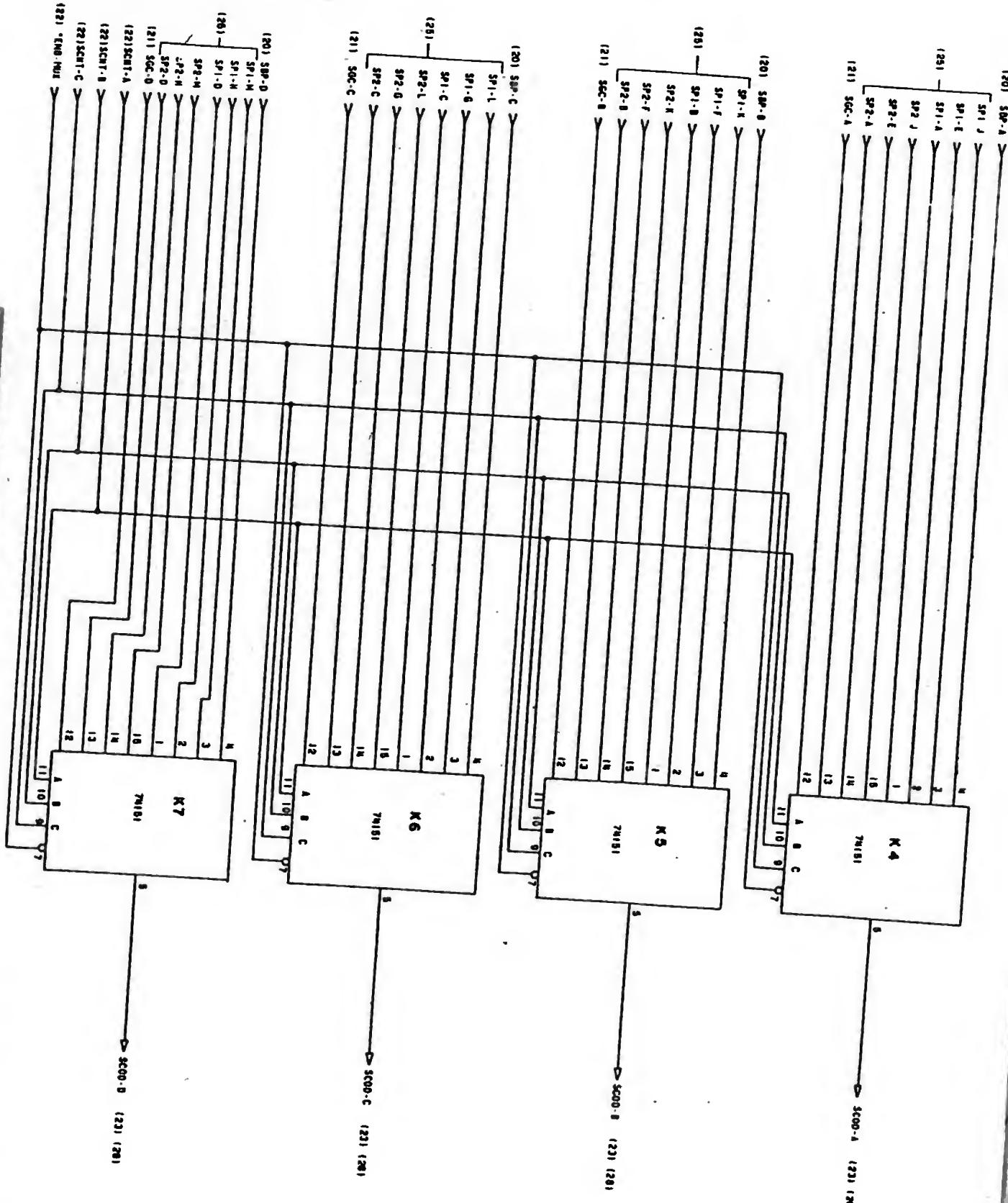
PAGE



**EXDY, INC.**

TV PINBALL

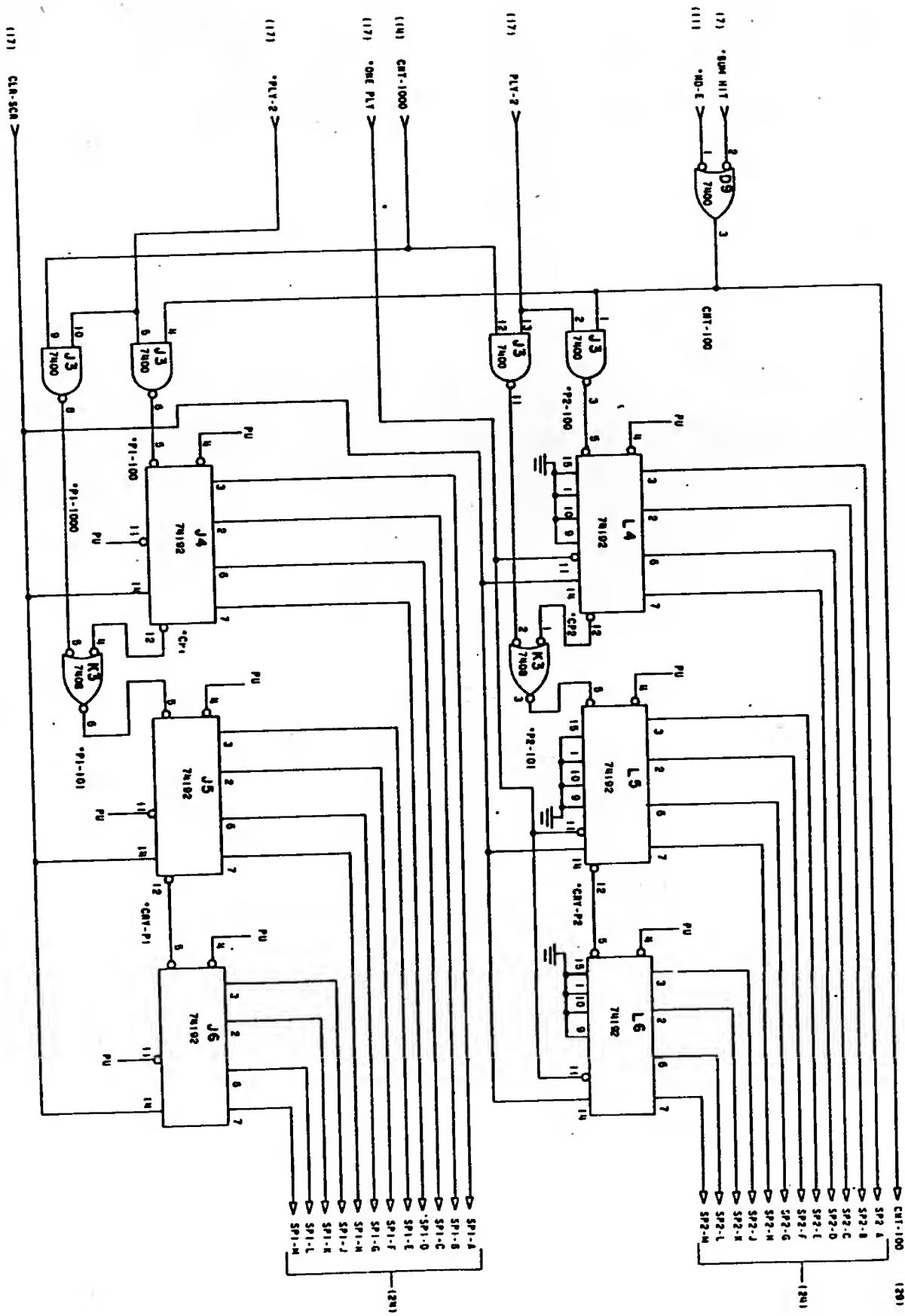
SCORE  
A



EXIDE, INC.

TV PINBALL

24



EXDY, INC.

TV PINBALL

SCORE C

PAGE

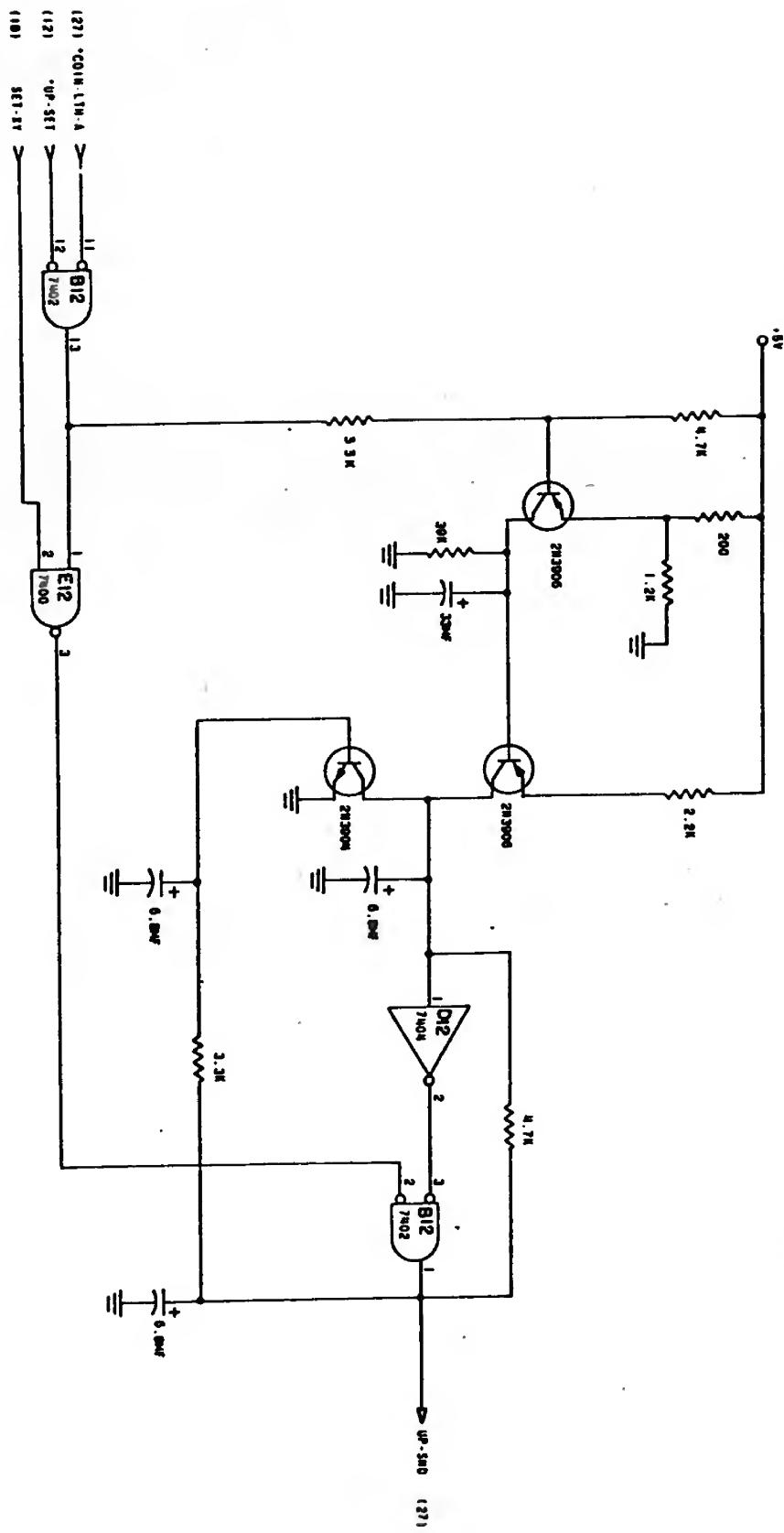
25

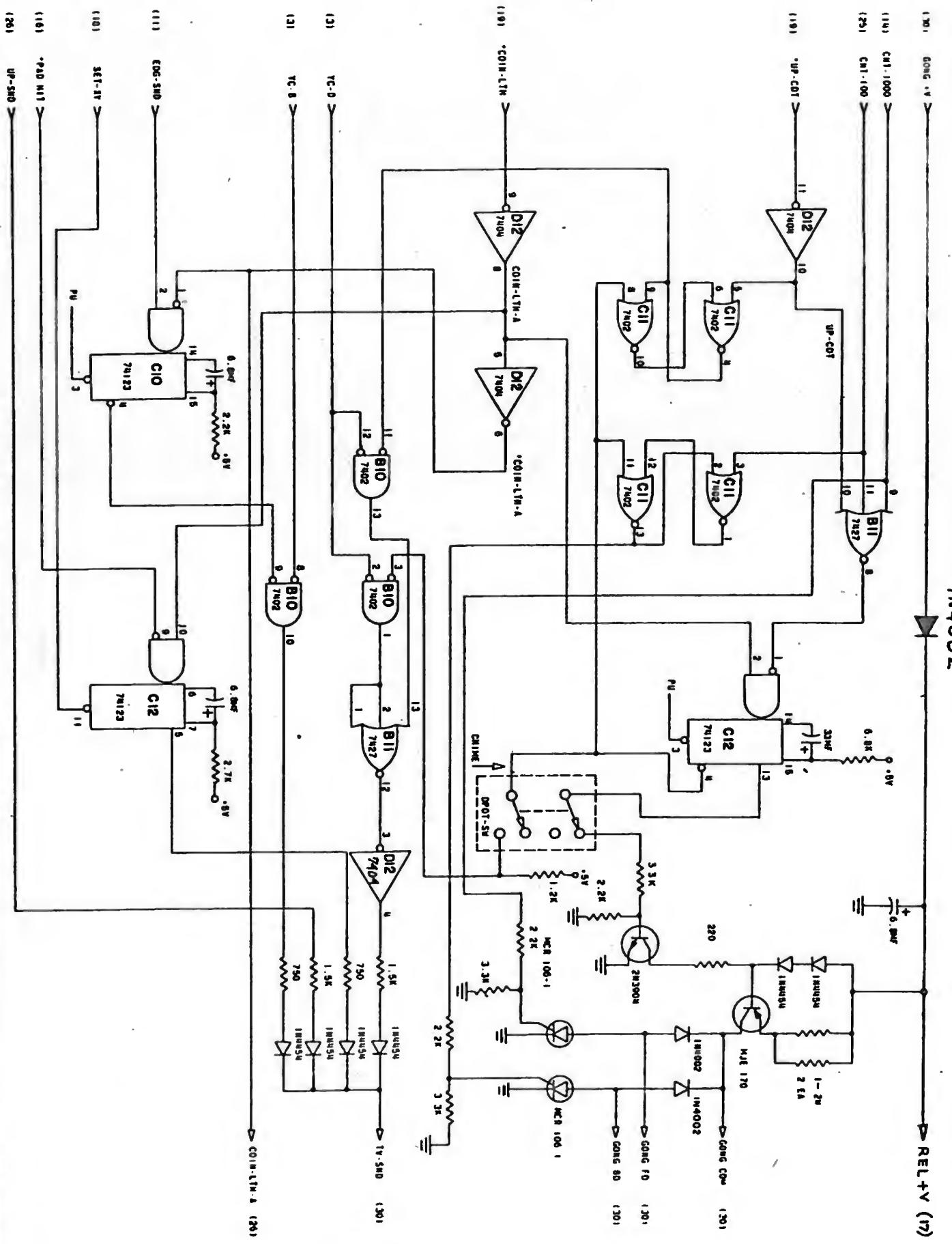
EXDY, INC.

TV PINBALL

UP SOUND

PAGE  
26

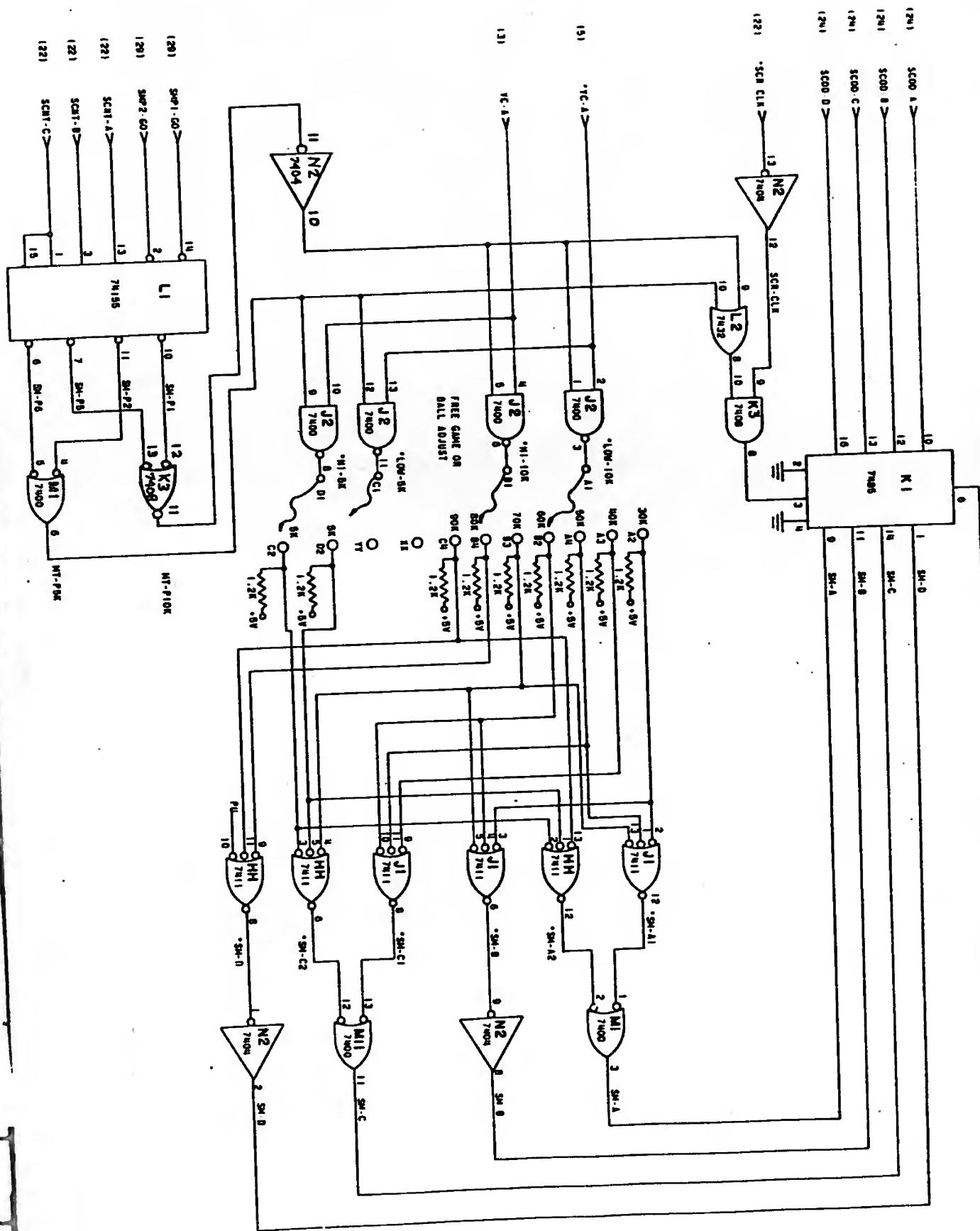




**EXDY, INC.**

TV PINBALL

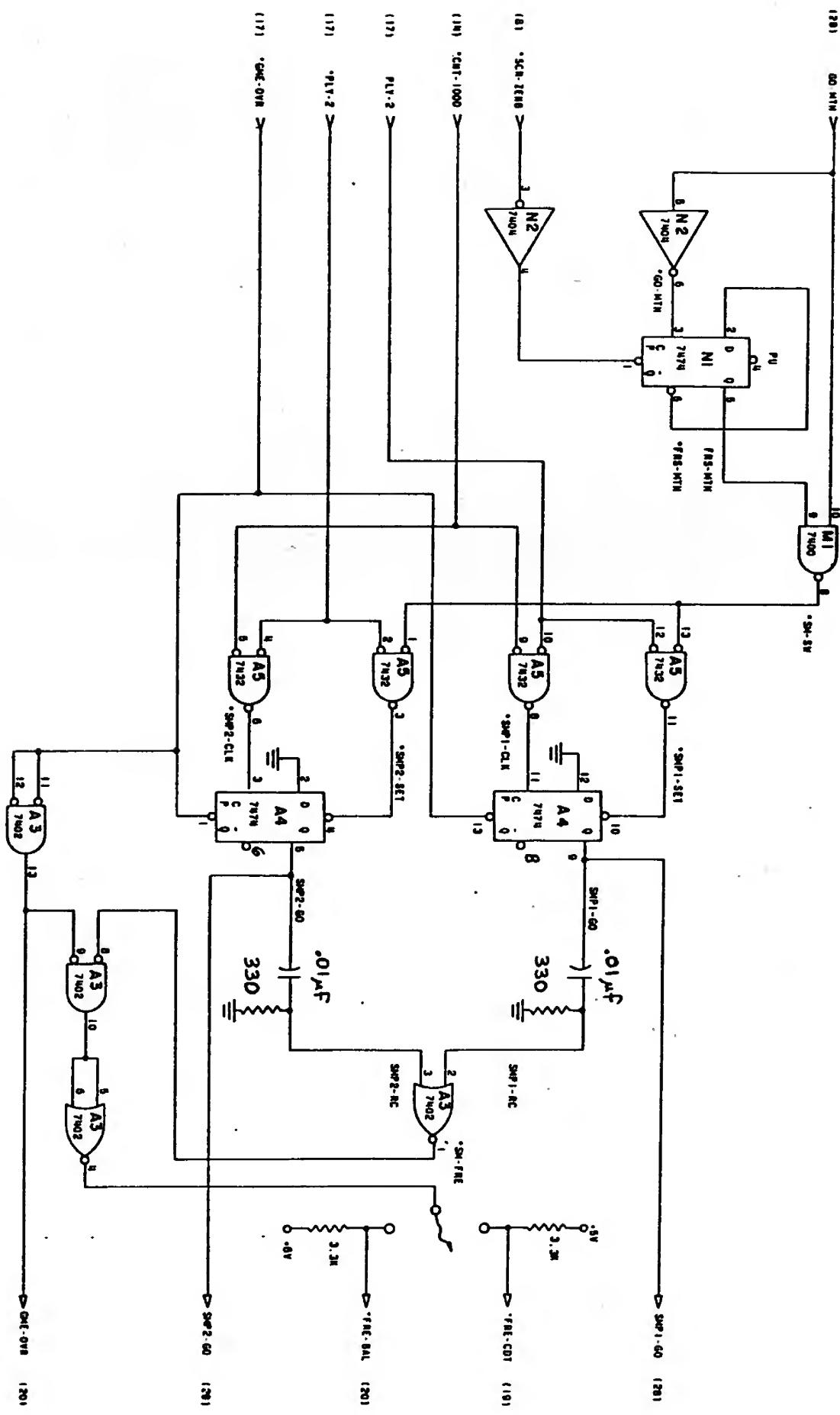
SOUND



**EXIDY, INC.**

TV PINBALL

SCORE MATCH



EXILE, INC.

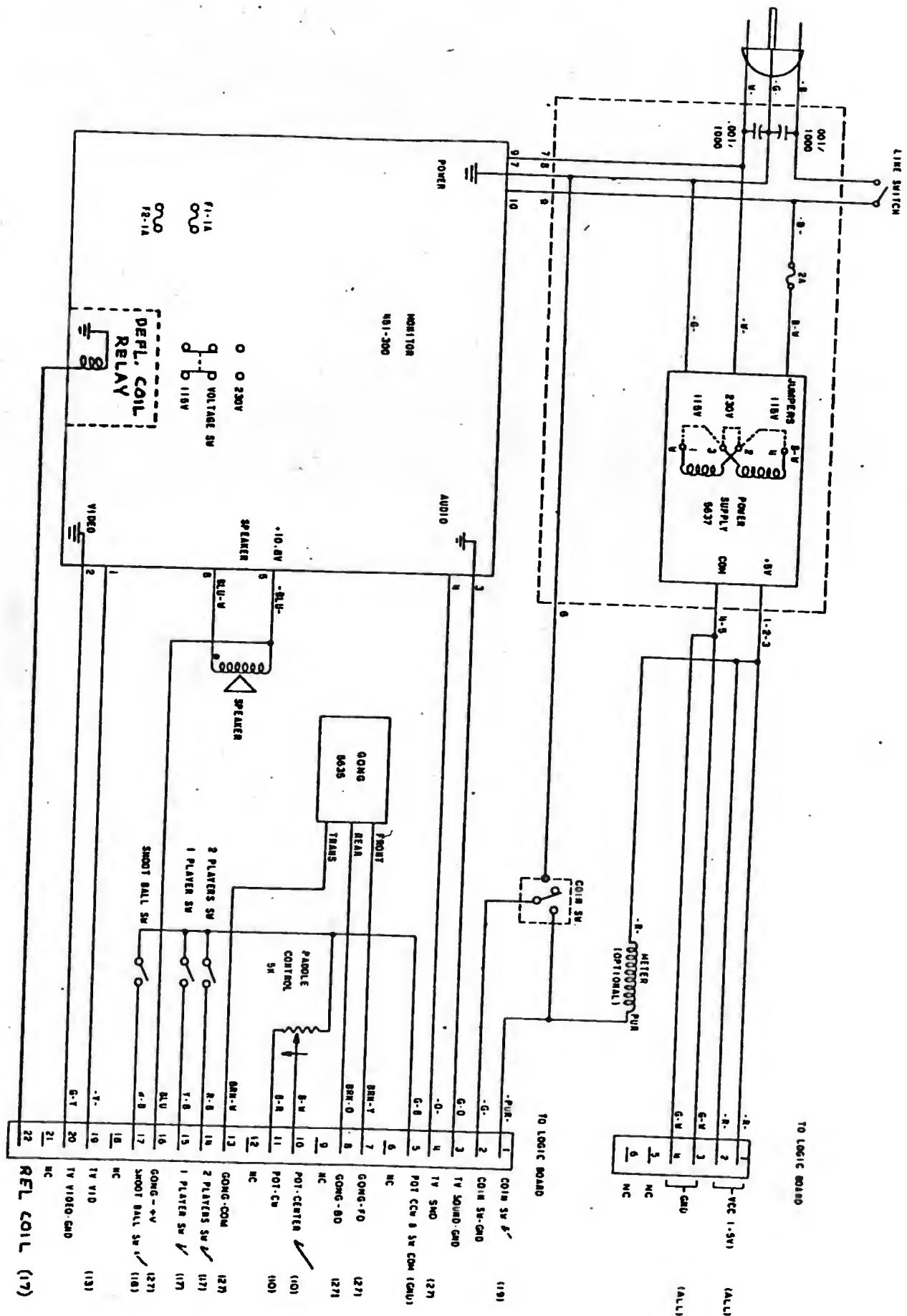
TV PINBALL

四

EXT, INC.

TV PINBALL

## CABINET SCHEMATIC





# **EXIDY**, INC.

166 San Lazaro Street  
Sunnyvale, California 94086  
(408) 733-1104

## **T V P I N B A L L**

### **B A S I C I N F O R M A T I O N**

#### **I. ACCESS TO MACHINE**

- A. Remove two 3/8 bolts to open table top (inside front door).
  1. A board located at the top of the picture tube can be used to secure the top in an upward position.
- B. The monitor can be removed by pulling upward on the monitor brackets.
  1. The harness has been designed to allow the monitor to travel the length of its guide, but only a few inches beyond this point.

#### **II. GENERAL MAINTENANCE**

- A. If the monitor screen becomes hazy or cloudy, Windex can be used to clean it.
  1. Rub lightly when cleaning color overlay; paint can be damaged if too much pressure is applied.
- B. To check power supply voltage, do so with unit powered and PC board under load. Pins 1 (positive) and 3 (negative) of 6 pin connector can be utilized to measure voltage (voltage should be 5.2 V DC).
  1. If voltage is under 5.2 V DC, adjustment at the power supply is possible using the adjustment pot (clockwise to increase volts).
  2. If voltage will not attain 5.2 V, the power supply should be replaced.
- C. The relay assembly is located at the rear of the monitor's chassis. Characteristic problems connected with relay malfunctions are:  
(1.) Picture will not flip over to Player 2; and (2.) Shoot switch or pot control problems. (Unit should not be powered when removing relay.)
- D. The PC board can be removed by disconnecting the card edge connectors and pulling upward until board is clear of guide.
  1. Numbers on the PC board correspond to numbers on the card edge connectors to insure proper connections.
  2. Changes can be made on the PC board to change various characteristics of the game. (See enclosed literature.)

## HOW TO SET UP YOUR TV PINBALL

Remove the LOGIC printed circuit card-- Notice the RED and GREEN patch cords.

Caution: This is a delicate instrument.

GAME

Plug wire marked GAM into pins • 1/25¢ • 3/50¢ • 2/25¢

BALL

Plug wire marked BALL into pins • 3 or • 5 Balls per player.

FREE

Plug wire marked FREE into pins • BALL or • GAME  
FOR AN EXTRA BALL OR AN EXTRA GAME AS SET UP FROM SCORE LEVELS

SCORE

1 Game Credit	POINTS	2 Game Credit
A1 to A2 & C1 to XX	30,000	
A1 to A2 & C1 to C2	35,000	B1 to A2 & D1 to D2
A1 to A3 & C1 to XX	40,000	B1 to A3 & D1 to YY
A1 to A3 & C1 to C2	45,000	B1 to A3 & D1 to D2
A1 to A4 & C1 to XX	50,000	B1 to A4 & D1 to YY
A1 to A4 & C1 to C2	55,000	B1 to A4 & D1 to D2
A1 to B2 & C1 to XX	60,000	B1 to B2 & D1 to YY
A1 to B2 & C1 to C2	65,000	B1 to B2 & D1 to D2
A1 to B3 & C1 to XX	70,000	B1 to B3 & D1 to YY
A1 to B3 & C1 to C2	75,000	B1 to B3 & D1 to D2
A1 to B4 & C1 to XX	80,000	B1 to B4 & D1 to YY
A1 to B4 & C1 to C2	85,000	B1 to B4 & D1 to D2
A1 to C4 & C1 to XX	90,000	B1 to C4 & D1 to YY
A1 to C4 & C1 to C2	95,000	B1 to C4 & D1 to D2

CHANGE GAME CARD ON FRONT PANEL FOR NEW FORMAT

USE STICK-ON LABEL PROVIDED

BELL / CHIME

A slide switch located near main connector-- This disables the Chimes for an audio sound.

## TVPB Adj. Procedure

1. Set voltage at connection to +5V
2. Adj. paddle size with game in idle mode  
(Next to 20K; about a 240K)  
Sheet 16, RX1, Near Chip H12  
Paddle must have small space on right side before bumper  
The smaller R used, the larger the space
3. Adj. paddle notch with game in select mode  
(Next to 10 K; about a 30K)  
Sheet 16, RX2, Near Chip H12  
The smaller R used, the more notch goes to left
4. Moving target Adj. (Top left corner Sheet 15)
  - a. Set scope .5 SEC, INT -, Level -
  - b. Scope probe on 1.2K next to 400 UF cap
  - c. Adj. 2.7K first (Next to 2 diodes right; need about 30K in parallel)
  - d. Adj. for 2.5 sec (target moves left to right)
  - e. Adj. 1.5K (Next to 2 diodes left; need about 5.1K in parallel)
5. Check adj. after soldering in resistors
6. Ball mode change--place game in idle mode
  - a. Ground 3.3K resistor in random OSC (Near A12 Chip)
  - b. Mode change when ball hits a pocket should be frequent.  
If not add a 240K across 39K resistor (Sector A10,  
Sheet 11 & 12)
7. Speed up time
  - a. Speed up time on odd balls 18 sec.
  - b. Speed up time on even balls 36 sec.
  - c. Place a .1 UF cap across .001 UF on 20K Chip H12
  - d. Put scope on G1-7
  - e. Check time required for ball speed up
  - f. Observe that the ball does speed up when the level of G1-7 goes high
8. Bell switch
  - a. Bell switch in left position the bell should ring  
Back door for bumpers  
Front door for M-T & Wipe Out
  - b. Bell switch in right position--credit sound should replace bell sound

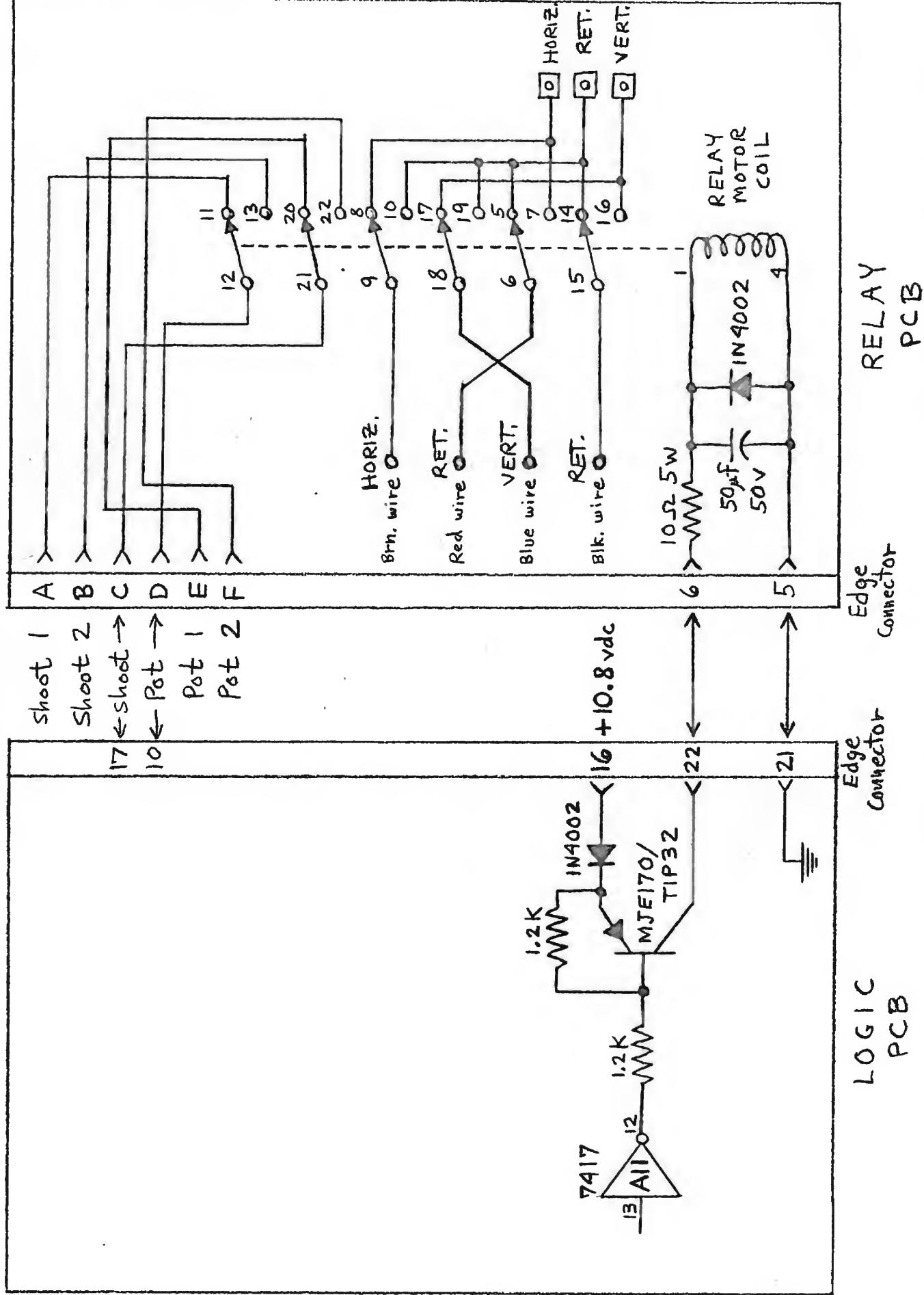
9. Place in player 2 select mode
  - a. Place game coin select on 1/25¢
  - b. Press credit switch, causing one credit to show on screen
  - c. Press 1 player then 2 players; only 1 player should show
  - d. Press credit switch; 2 credits will show
  - e. Press one player then 2 players; both should show
  - f. Repeat for all credits through 19
10. Game credit per 25¢
  - a. Place game coin select on 2/25¢; should give credit when credit button is pushed and when credit button is released
  - b. Place game coin select on 3/50¢; set credit on zero--reset DC. First 25¢ should give 1 credit and 2 25¢ should give 2 credits. Select 2 players mode and press shoot; credits should drop from 3 to 1
11. Ball amount
  - a. Set ball on 3; play game and observe that game ends on 3 balls
  - b. Set ball on 5; play game and observe that game ends on 5 balls
12. 2 Player switch
  - a. Place credit on 2
  - b. Press 2 Player
  - c. Shoot ball; credits should go to zero; when ball is lost and ready for new serve, 2 player should light
13. Score match test
  - a. Select 2 players
  - b. Place score patch on 35,000 and 45,000; place free game patch on GAM
  - c. Ground G3-8; a credit should be given at 35,000 and 45,000
  - d. Move score patch to 55,000 and 65,000 and observe credits being given
  - e. Move score patch to 75,000 and 85,000, then 95,000 and observe credits being given
  - f. Place score patch on 40,000 and 80,000 with both 5,000 patches free
  - g. Notice game credit at 40,000 and 80,000
  - h. Change play to second player score; place lower 5,000 wire on C2 and upper 5,000 wire on YY
  - i. Ground G3-8; notice credit for 45,000 and 80,000

14. Free ball
  - a. Place ball game selector on free ball
  - b. Set score select on 35,000 and 45,000
  - c. Set play for 2 players
  - d. Ground G3-8 until score of player 1 reads greater than 45,000
  - e. Let ball play until player 2 is on
  - f. Ground G3-8 until score of player 2 is greater than 45,000
  - g. Play game through; game should not end until 9 balls have been served
15. Up sound
  - a. Check up sound for clarity and not a broken up quality
16. Score reading
  - a. Score 100 points for pocket or bumper
  - b. Score 2000 for MT hit
  - c. Score 8000 for Wipe-out
  - d. Max credits is 19
17. Reset on end of ball
  - a. Set the ball in action and allow it to erase 2 or 3 bumpers. As the ball leaves the screen hold down the shoot button. Screen should reset to 16 bumpers and upon release of button ball should move from reset position. With game over screen should go into idle mode, if shoot button is held down
18. Game play
  - a. Play game and see if it generally plays as it should
  - b. Check for corner closing
  - c. Check for random vector change
19. Leave game on 3/50%, 5 balls, free-game score of 45,000 and 80,000
20. Check that the board works OK from 4.5V to 5.5V.

# EXIDY

T.V. PINBALL

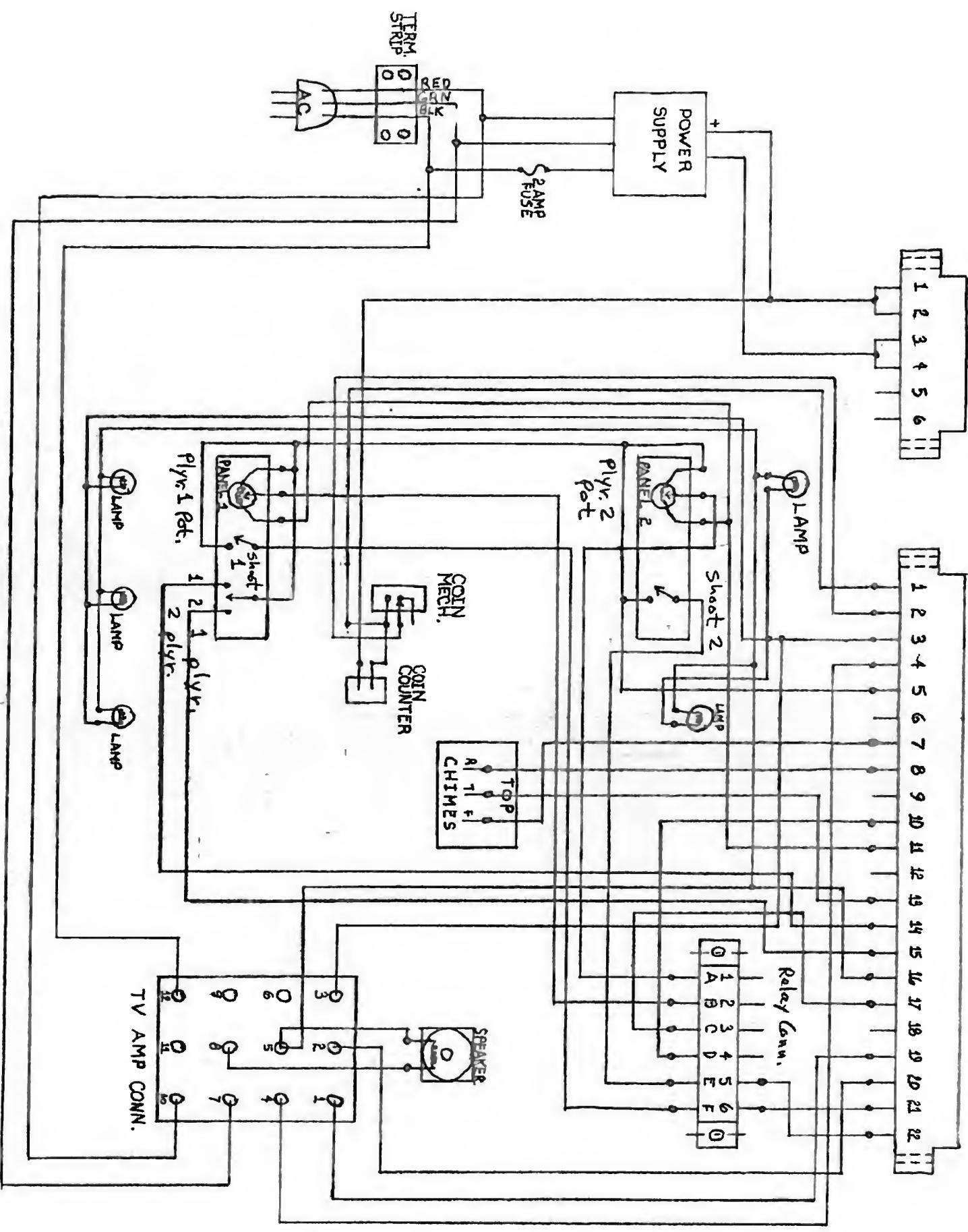
RELAY INTERFACE CIRCUITRY



EXIDY INC.

L.W.D.

1 VFB (Table Model) CABINET WIRING DIAGRAM



# **EXIDY, INC.**

166 San Lazaro Street  
Sunnyvale, California 94086  
(408) 733-1104

## **TV PB**

### **A N T I - S T A T I C   M O D I F I C A T I O N**

Change the following 330 pf caps. to .01 uf ceramic caps:

1. Cap below F11 (From F11-13 to F11-4)
2. Cap below E11 (From E12-6 to F11-1)
3. 3 caps -- location M10 (From L10-10 to L10-13)  
(From L10-7 to L10-11)  
(From K11-9 to L10-9)
4. Cap below K8 (From J9-9 to J8-12)
5. Cap below B4 (From A4-9 to A3-2)
6. Cap below A4 (From A4-5 to A3-3)

Add:

#### .01 uf Cap

1. From F11-8 to ground (trace @ F11-7)  
(Connect to area of trace adjacent to F11-8)
2. From K8-4 to K8-7 (Ground pin)
3. From J8-11 to ground (trace @ J8-8)  
(Connect to area of trace adjacent to J8-9)
4. From J8-5 to J8-8 (Ground pin)
5. From J8-4 to ground (trace @ J8-8)  
(Same point as #4 above)
6. From M4-5 to M4-8 (Ground pin)

#### .001 uf Cap

1. From F11-4 to F11-7 (Ground pin)

# EXIDY, INC.

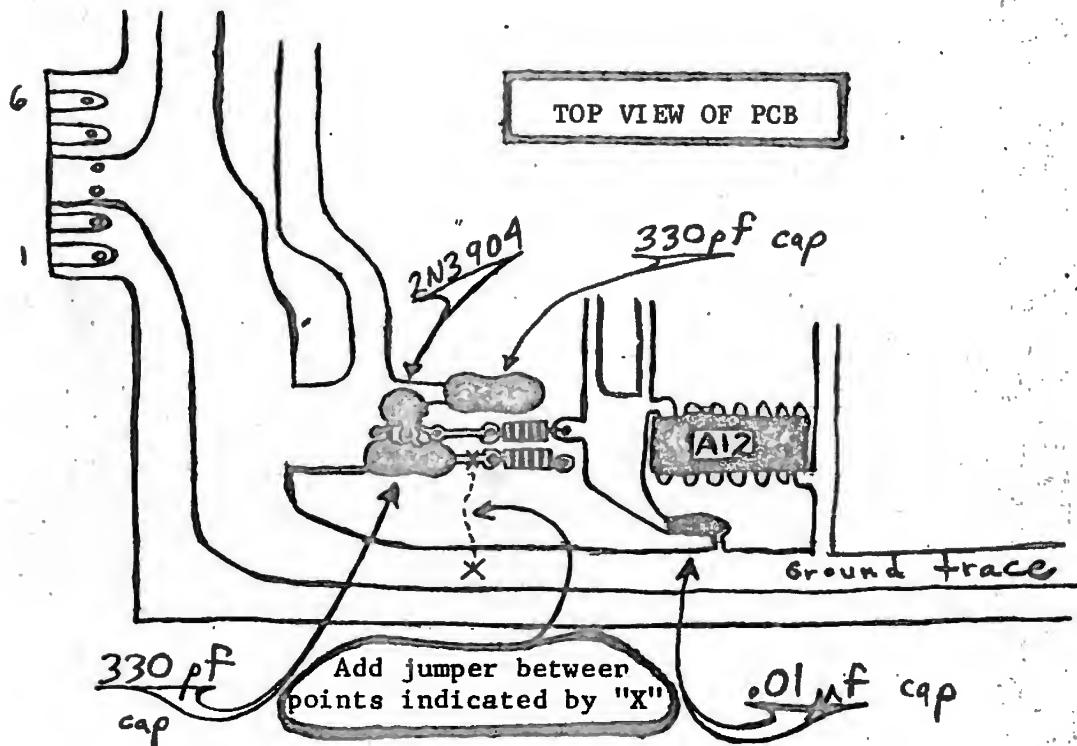
166 San Lazaro Street  
Sunnyvale, California 94086  
(408) 733-1104

July 25, 1975

Dear Customer:

The Exidy TV Pinball can be modified to increase your earning. Shown below is a simple one jumper modification which will change the play of the game slightly.

- A.) Makes ball change speed and direction more often thus making the game more exciting to play.



If your picture looks hazy or cloudy remove the T.V. set and wipe it off with Windex--your unit will look like new. This will take about five minutes.

Should you have any questions, please feel free to contact me at your convenience.

Sincerely,

H. R. Kauffman  
Exidy, Inc.  
H. R. Kauffman, President

## DRAWING ABBREVIATIONS

### Sheet 1

1. OSC-1, 2, 3, & 4	Oscillator circuit
2. Bit CLK	4 MHZ clock
3. SLC	Scan line clock
4. XCI, 2 & 3	X count 1, 2, & 3
5. XC, A, B, C, D, & E	X count A, B, C, D, & E
6. X CLK	X clock
7. Set-X-Up	Set X to count up
8. Set-X-Down	Set X to count down
9. TOG-X	Toggle X count F/F
10. VGX-Up	Vector generator X up
11. VGX-DW	Vector generator X down
12. VGX-CMP	Vector generator compare
13. VGX-CUP	Vector generator carry up
14. VGX-CDW	Vector generator carry down
15. SET-XY	Set X and Y count
16. XA-XB	X count A equals X count B
17. VGX-I through E	Vector generator I through E

### Sheet 2

18. X-PLY-FLD	X playfield
19. XP-0 through 28	X position 0 through 28
20. XPD-F	X position data - F

### Sheet 3

21. Y-CLK	Y clock
22. Set-Y-Dwn	Set-Y-down
23. Set-Y-Up	Set-Y-up
24. TOG-Y	Toggle Y
25. VGY-CRY	Vector generator Y carry
26. Y 256	Y count 256
27. Y 262	Y count 262
28. YC-I through F	Y count I through F
29. YA-YB	Y count A equals Y count B
30. VGY-CMP	Vector generator Y compare
31. VGY-ENB	Vector generator Y enable
32. VGY-UP	Vector generator Y count up
33. VGY-DW	Vector generator Y count down
34. VGY-I through E	Vector generator I through E
35. VGY-CUP	Vector generator compare up
36. VGY-CDP	Vector generator compare down

## Sheet 4

37.	YPD-A through G	Y position data A through G
38.	Y-END	End of Y display
39.	YP-21	Y position 21
40.	CLR-BUM-CNT	Clear bumper counter
41.	YP 0	Y position 0

## Sheet 5

42.	BG-SHF	Bumper generator shift
43.	CLK-BGS	Clock bumper generator shift
44.	CLR-BGS	Clear bumper generator shift
45.	YP-MT	Y position moving target
46.	Y-ENB	Y - enable

## Sheet 6

47.	BAL-NOW	Ball now
48.	RAM-SET	Random set
49.	LFT-PKT-HIT	Left pocket hit
50.	RHT-PKT-HIT	Right pocket hit
51.	LFT-EDG-VID	Left edge video
52.	RHT-EDG-VID	Right edge video
53.	LFT-EDG-HIT	Left edge hit
54.	RHT-EDG-HIT	Right edge hit
55.	BGS-CLK	Bumper generator shift clock
56.	BG-SHF	Bumper generator shift
57.	BG-Y1	Bumper generator Y count 1
58.	BG-Y2	Bumper generator Y count 2

## Sheet 7

59.	ZRO-BUM	Zero bumper displayed
60.	BG-R	Bumper generator ready
61.	BUM-VID	Bumper video

## Sheet 8

62.	TD-A through S	Top display - A through S
63.	SCR-ZENB	Score Z enable
64.	TOP-VID	Top video
65.	TOP-PKT-HIT	Top pocket hit
66.	TOP-EGD-HIT	Top edge hit
67.	V-SYNC	Vertical synchronizing
68.	CLK-MOD	Clock mode

## Sheet 9

69.	BAL-VID	Ball video
70.	BC-A through J	Ball control A through J
71.	BC-BALN	Ball control ball now
72.	BC-STP	Ball control stop
73.	BC-SCLR	Ball control stop clear

( 3 )

Sheet 10

74. H-SYNC-RAMP  
75. PAD-ALOG

Horizontal synchronizing ramp  
Paddle analog

Sheet 11

76. PAD-HIT  
77. HD-P  
78. HD-A through Y  
79. MT-LR  
80. COIN-LTH  
81. EDG-SND  
82. FST-CLK  
83. SPD-UP  
84. SU-CLK

Paddle hit  
Hit decode - P  
Hit decode A through Y  
Moving target left right  
Coin latch  
Edge sound  
Fast clock  
Speed up  
Speed up clock

Sheet 12

85. CNT-IKON  
86. PAD-HIT-MID  
87. MC-A through E  
88. MOD 1 through 2  
89. RAM-SET  
90. RAM-OSC  
91. UP SET

Count 1000 on  
Paddle hit middle  
Mode control A through E  
Mode 1 through 2  
Random set  
Random oscillator  
Up ball set

Sheet 13

92. SCR-VID  
93. MT-VID  
94. PAD-VID  
95. MIX-VID-A, B, C

Score video  
Moving target video  
Paddle video  
TV video

Sheet 14

97. HLF-BLK  
98. CNT-ZBUM  
99. CNT-1000

One half blink  
Count zero bumper  
Count 1000

Sheet 15

100. MT-HIT  
101. MT-SET  
102. MT-RST

Moving target hit  
Moving target set  
Moving target reset

Sheet 16

103. PC-FUL  
104. PC-HLF  
105. PC-MID  
106. PC-RC

Paddle control full  
Paddle control half  
Paddle control middle  
Paddle control resistor capacitor

## Sheet 17

107.	CC-SER	Credit control serve
108.	GME-OVR	Game over
109.	SER-1 PLY	Set 1 player
110.	SER-2 PLY	Set 2 players
111.	GO-1 PLY	Go 1 player
112.	GO-2 PLY	Go 2 players
113.	CLR 1 PLY	Clear 1 player
114.	ONE PLY	One player
115.	TWO PLY	Two players
116.	PLY - 2	Player 2 up
117.	CLR-SCR	Clear score
118.	CDD-12	Credit 1 and 2
119.	CDT-NOW	Credit now
120.	CC-A, B, C	Credit control A, B, C

## Sheet 18

121.	COIN-SMT	Coin schmitt
122.	SER-BAL	Serve ball
123.	SER-SMT	Serve schmitt
124.	ON-SET-XY	Set XY FF on

## Sheet 19

125.	ZRO CDT	Zero credit
126.	FRE CDT	Free credit
127.	EOG	End of game
128.	UP-CDT	Up credit count
129.	POR	Power on reset

## Sheet 20

130.	BC-1, 2, 3, 4	Ball count 1, 2, 3, 4
131.	CMP-EOG	Compare end of game
132.	STP-BC	Stop ball count
133.	CLK-BC	Clock ball count

## Sheet 21

134.	SCR PH2	Score phase 2
135.	SGC-A, B, C, D	Score game count-A, B, C, D
136.	GC-CRY	Game count-carry
137.	GC-BRW	Game count borrow
138.	GC-set	Game count set

## Sheet 22

139.	UL-A through E	Under line A through E
140.	SCR-PHI	Score phase 1
141.	SCR-XP	Score X position
142.	SCR-GO	Score go
143.	SCR-CLK	Score clock

## Sheet 22 cont.

144. SCNT A, B, C      Score count A, B, C  
 145. ENB-MUX      Enable multiplexer  
 146. SCR-ENB      Score enable  
 147. UL-NOW      Under line now

## Sheet 23

148. SCRA-A through G      Score A-A through G  
 149. SCRA-I through 5      Score A-I through 5  
 150. ENB-SEG      Enable segment

## Sheet 24

151. SOCD-A, B, C, D      Score data A, B, C, D

## Sheet 25

152. SP2-A through M      Score player 2 - A through M  
 153. P2-100      Player 2 count 100  
 154. P2-1000      Player 2 count 1000  
 155. SPI-A through M      Score player 1 - A through M  
 156. PI-100      Player 1 count 100  
 157. PI-1000      Player 1 count 1000

## Sheet 26

158. UP-SND      Up sound

## Sheet 27

159. GONG COM      Gong common  
 160. GONG FD      Gong front door  
 161. GONG BD      Gong back door  
 162. TV-SND      TV sound

## Sheet 28

163. SMP1-GO      Score match player 1 go  
 164. SMP2-GO      Score match player 2 go  
 165. SMA, B, C, D      Score match A, B, C, D  
 166. LOW 10K      Lower 10,000 match point  
 167. HI-10K      Higher 10,000 match point  
 168. LOW-5K      Lower 5,000 match point  
 169. HI-5K      Higher 5,000 match point  
 170. SM-PI      Score match player 1  
 171. SM-P2      Score match player 2  
 172. SM-P5      Score match player 1 - 5 K  
 173. SM-P6      Score match player 1 - 6 K

## Sheet 29

174. FRS-MTH      First match  
 175. GO-MTH      Go match  
 176. SMP1-GO      Score match player 1 - go